RA
421
P78
no.111
cop.2
Biological
& Medical
Serials

TREASURY DEPARTMENT
UNITED STATES PUBLIC HEALTH SERVICE

PUBLIC HEALTH BULLETIN No. 111

APRIL, 1921

TRANSACTIONS

OF THE

EIGHTEENTH ANNUAL CONFERENCE

OF STATE AND TERRITORIAL HEALTH OFFICERS WITH THE UNITED STATES PUBLIC HEALTH SERVICE

HELD AT WASHINGTON, D C.
MAY 26 AND 27, 1920

LIBRARY
NOV 3 1921
UNIVERSITY OF TORONTO

WASHINGTON
GOVERNMENT PRINTING OFFICE
1921

TREASURY DEPARTMENT
UNITED STATES PUBLIC HEALTH SERVICE

PUBLIC HEALTH BULLETIN No. 111
APRIL, 1921

TRANSACTIONS

OF THE

EIGHTEENTH ANNUAL CONFERENCE

OF STATE AND TERRITORIAL HEALTH OFFICERS WITH THE UNITED STATES PUBLIC HEALTH SERVICE

HELD AT WASHINGTON, D. C.
MAY 26 AND 27, 1920

WASHINGTON
GOVERNMENT PRINTING OFFICE
1921

CONTENTS.

	Page.
Letter calling conference	4
Standing committees	5
Provisional program	6
List of speakers	8
Morning session, May 26, 1920	11
Delegates present	11
Opening remarks of the Surgeon General	13
Opening address of Hon. J. H. Moyle	13
Remarks by the Surgeon General	14
Appointment of committees	15
Reports of committees	16
Sanitation of public conveyances	16
Interstate quarantine regulations	16
Rural sanitation	21
Report of board on excreta disposal	34
Afternoon session, May 26, 1920	45
Discussion of report of board on excreta disposal	46
Discussion of the Fess-Capper bill for physical education	48
Coordination of effort and promotion of efficiency in field of sanitary engineering	54
Sheppard-Towner bill for public protection of maternity and infancy	57
Morning session, May 27, 1920	73
Discussion of child hygiene activities in the service	73
Discussion of malaria	88
Discussion of rural sanitation	96
Afternoon session, May 27, 1920	106
Endemic index and communicable disease control	106
Better morbidity reports	110
Teeth and mouth infection	111
Trachoma	112
Provision for lepers	114
Returning bodies of soldiers from France	116
Migration of tuberculous persons	118
Report of committee on resolutions	118
Venereal disease control	120
Future plans	125

LETTER CALLING THE CONFERENCE.

TREASURY DEPARTMENT,
BUREAU OF THE PUBLIC HEALTH SERVICE,
Washington, March 15, 1920.

DEAR DOCTOR: I have the honor to inform you that the eighteenth annual conference of State and Territorial health authorities with the United States Public Health Service will be held at Washington, D. C., May 26 and 27, 1920, beginning at 10 a. m., May 26. It is urged that your State be represented by an official delegate, as important State and National public health matters will be brought before the conference for action. Although but one delegate from each State has the privilege of voting, a cordial invitation to attend the conference and take part in the discussion is extended to any other representatives which your State may care to designate.

I take pleasure in inviting you to suggest topics which in your opinion should be discussed at the conference.

It is requested that you advise me as soon as practicable as to the name of the official delegate selected to represent your State.

Very truly, yours,

HUGH S. CUMMING,
Surgeon General.

STANDING COMMITTEES.

Morbidity Returns.

Dr. Eugene R. Kelley, chairman.
Dr. C. Hampson Jones.
Dr. B. S. Warren.

Sanitation of Public Conveyances.

Dr. Oscar Dowling, chairman.
Dr. J. N. Hurty.
Dr. T. B. Beatty.
Dr. W. F. Cogswell.
Dr. Victor G. Heiser.

Interstate Quarantine Regulations.

Dr. John S. Fulton, chairman.
Dr. E. G. Williams.
Dr. C. E. Smith, jr.
Dr. S. J. Crumbine.
Dr. T. B. Beatty.
Dr. A. J. McLaughlin.

Rural Sanitation.

Dr. W. S. Rankin, chairman.
Dr. C. E. Dalton.
Dr. J. A. Hayne.
Dr. L. L. Lumsden.

Trachoma.

Dr. John McMullen, secretary.

PROVISIONAL PROGRAM.

Opening remarks by the Surgeon General.
Roll call of delegates.
Appointment of committees.

REPORTS OF STANDING COMMITTEES.

Morbidity returns: Dr. Eugene R. Kelley.
Sanitation of public conveyances: Dr. Oscar Dowling.
Interstate quarantine regulations: Dr. John S. Fulton.
Rural sanitation: Dr. W. S. Rankin.
Trachoma: Dr. John McMullen.

SPECIAL REPORT.

Progress report of commission appointed by the Surgeon General to study the problem of sanitary disposal of human excreta in unsewered communities; Prof. C. W. Stiles.

NEW BUSINESS.

Initiation of a Nation-wide health campaign.

Public health administration:

Discussion of data obtained from questionnaire concerning whole-time county health officers in the various States.

Child Hygiene:

Discussion of Fess bill for physical education promoted by the national physical education service.

Discussion of Sheppard-Towner bill for Public protection of maternity and infancy.

Report of child hygiene activities of the service.

Framing of a National and State policy for the production of clean milk in adequate quantities.

Rural sanitation:

Determination of a workable plan of presenting financial equivalents in county health work.

Rural sanitation with special reference to county demonstration work with small budgets in Virginia.

Discussion of cooperative demonstration work in rural sanitation in Virginia.

Endemic index and communicable disease control.
Better morbidity reports.
Coordination of effort and promotion of efficiency in field of sanitary engineering.
Malaria:
    Mosquito film. Produced by the Public Health Service in cooperation with the Reclamation Service, Bureau of Fisheries, and the Bray Studios.
    Extension of cooperative malaria work.
Migration of tuberculous persons.
Provision for lepers.
Venereal diseases:
    Control of venereal diseases with reference to the relation of the United States Public Health Service to States and cities in handling this problem.
Maritime quarantine against the importation of venereal diseases in their active stages.

LIST OF SPEAKERS.

	Page.
Opening remarks by Surg. Gen. Hugh S. Cumming	13
Opening address by Hon. J. H. Moyle	13
Sanitation of public conveyances:	
Dr. Oscar Dowling	16
Interstate quarantine regulations:	
Dr. John S. Fulton	16
Dr. R. B. Norment, jr	18
Dr. John B. Anderson	20
Dr. S. W. Welch	20
Rural sanitation:	
Dr. L. L. Lumsden	21
Dr. A. W. Freeman	24
Dr. L. I. Harris	25
Dr. J. N. Hurty	27
Dr. A. T. McCormack	29
Dr. M. Nicoll, jr	30
Dr. John A. Ferrell	30
Dr. B. W. Carey	31
Dr. J. A. Hayne	31
Dr. R. K. Flannagan	33
Excreta disposal:	
Prof. C. W. Stiles	34
Dr. W. S. Rankin	46
Dr. J. N. Hurty	46
Dr. Abercrombie	47
Fess-Capper bill for physical education:	
Dr. W. S. Rankin	48
Dr. T. Clark	50
Dr. A. T. McCormack	51
Dr. L. L. Lumsden	53
Dr. B. W. Carey	53
Coordination of effort and promotion of efficiency in field of sanitary engineering:	
Dr. A. J. McLaughlin	54
Sheppard-Towner bill for public protection of maternity and infancy:	
Dr. J. W. Schereschewsky	57
Dr. T. Clark	58
Child hygiene activities in the service:	
Dr. Oscar Dowling	73
Dr. G. H. Jones	73
Dr. J. N. Hurty	74
Dr. I. R. Bancroft	76
Dr. M. M. Seymour	77
Dr. C. A. Harper	79
Dr. I. H. Dillon	81

Child hygiene activities in the service—Continued. Page.
Dr. R. M. Olin ... 81
Dr. L. A. De Vilbiss ... 82
Dr. C. P. Knight ... 84
Dr. C. W. Goddard ... 87
Dr. T. Clark ... 87
Malaria:
Dr. L. D. Fricks ... 88
Dr. H. R. Carter ... 91
Dr. I. R. Bancroft ... 92
Dr. Oscar Dowling ... 92
Dr. W. S. Rankin ... 93
Dr. S. W. Welch ... 94
Dr. C. W. Goddard ... 95
Dr. J. A. Ferrell ... 95
Rural sanitation:
Dr. W. S. Rankin ... 96
Dr. J. A. Hayne ... 98
Dr. E. G. Williams ... 99
Dr. W. F. Draper ... 101
Dr. A. T. McCormack ... 105
Endemic index and communicable disease control:
Dr. A. J. McLaughlin ... 106
Dr. S. L. Jepson ... 108
Dr. B. W. Carey ... 109
Dr. Oscar Dowling ... 110
Morbidity reports:
Dr. B. S. Warren ... 110
Teeth and mouth infection:
Maj. L. G. Mitchell ... 111
Trachoma:
Dr. John McMullen ... 112
Dr. A. T. McCormack ... 113
Dr. Oscar Dowling ... 114
Dr. W. W. McDonell ... 114
Provision for lepers:
Dr. G. W. McCoy ... 114
Dr. F. E. Trotter ... 115
Dr. A. T. McCormack ... 116
Returning bodies of soldiers from France:
Dr. R. H. Creel ... 116
Dr. C. St. Clair Drake ... 117
Migration of tuberculous persons:
Dr. F. C. Smith ... 118
Committee on resolutions:
Dr. C. St. Clair Drake ... 118
Venereal disease control:
Dr. C. C. Pierce ... 120
Dr. R. H. Creel ... 122
Future plans:
Dr. J. W. Schereschewsky ... 125

EIGHTEENTH ANNUAL CONFERENCE OF STATE AND TERRITORIAL HEALTH AUTHORITIES WITH THE UNITED STATES PUBLIC HEALTH SERVICE.

TRANSACTIONS.

MORNING SESSION, WEDNESDAY, MAY 26, 1920.

The eighteenth annual conference of State and Territorial health authorities with the United States Public Health Service was called to order at 10 o'clock, a. m., May 26, 1920, at the branch building of the Public Health Service, First Street NW., between B and C Streets, Washington, D. C., Surg. Gen. Hugh S. Cumming presiding.

The following persons were present during the conference:

REPRESENTATIVES OF THE STATE HEALTH DEPARTMENTS.

Alabama: S. W. Welch, G. H. Hazelhurst.

Arkansas: E. P. Irwin, M. D.

California: Dr. John Thames, M. Z. Bair, and Dr. Irving R. Bancroft.

Colorado: Dr. R. S. Drinkwater.

Connecticut: Dr. John T. Black.

Delaware: Dr. C. H. Wells, Dr. Wm. P. Orr.

District of Columbia: Dr. John L. Norris.

Florida: Dr. G. W. Simons, jr. (representing Dr. Ralph Green), Dr. W. W. McDonell.

Georgia: Dr. T. F. Abercrombie.

Hawaii: Dr. F. E. Trotter.

Idaho: Dr. Ernest E. Laubaugh.

Illinois: Dr. C. St. Clair Drake, Dr. G. G. Taylor, Dr. H. F. Furgeson.

Indiana: Dr. Hugh A. Cowing, Dr. J. N. Hurty.

Iowa: Dr. W. S. Conklin.

Kansas: Dr. B. K. Kilbourne (representing Dr. Crumbine).

Kentucky: Dr. A. T. McCormack.

Louisiana: Dr. Oscar Dowling.

Maryland: Dr. John S. Fulton.

Massachusetts: Dr. Howard B. Streeter, Dr. B. W. Carey.

Michigan: Dr. J. M. Byington, Dr. E. D. Rich, Dr. R. M. Olin.

Minnesota: Dr. Charles E. Smith, jr.; Dr. H. A. Whittaker, Dr. H. G. Irvine.

Mississippi: Dr. W. S. Leathers.
Missouri: Dr. George H. Jones, Dr. R. L. Russell.
Montana: Dr. W. F. Cogswell.
Nebraska: Dr. I. H. Dillon, Dr. P. H. Bartholomew.
New Jersey: Dr. R. B. Fitz-Randolph.
New Mexico: Dr. C. E. Waller.
New York: Dr. Mathias Nicoll, jr.; Dr. J. S. Lawrence, Dr. L. I. Harris.
North Carolina: Dr. W. S. Rankin, H. E. Miller.
North Dakota: Dr. I. W. Mendelson (representing Dr. McGurren).
Ohio: Dr. R. G. Leland, Dr. Allen W. Freeman.
Oklahoma: Dr. J. C. Mahr.
Pennsylvania: Dr. C. A. Emerson, Dr. S. Leon Gans, Dr. E. S. Eberhart.
Rhode Island: Dr. B. U. Richards, Dr. J. E. Kearney.
South Carolina: Dr. James A. Hayne, Dr. C. V. Akin, E. L. Filby.
Tennessee: Dr. Olin West, W. J. Miller, Dr. G. A. Hays.
Texas: Dr. C. W. Goddard, Dr. Oscar Davis, Dr. V. M. Ehlers.
Virginia: Dr. E. G. Williams, Dr. Roy K. Flannagan, Richard Messer.
Washington: Dr. John B. Anderson, Dr. J. B. Capron.
West Virginia: Dr. S. L. Jepson, Dr. F. F. Farnsworth, E. S. Tisdale.
Wisconsin: Dr. W. F. Whyte, Dr. C. A. Harper, Dr. J. W. Heinker, Dr. Robert Olsen.

REPRESENTATIVES OF THE UNITED STATES PUBLIC HEALTH SERVICE.

Surg. Gen. Hugh S. Cumming.
Asst. Surgs. Gen.: H. R. Carter, C. C. Pierce, J. W. Schereschewsky, A. J. McLaughlin, R. H. Creel, and B. S. Warren.
Asst. Surg. Gen. (reserve): Taliaferro Clark.
Directing zoologist (reserve): C. W. Stiles.
Surgs. L. L. Lumsden, John McMullen, G. W. McCoy, L. D. Fricks, F. C. Smith.
Asst. Surg. R. B. Norment, jr.
Passed Asst. Surgs. C. P. Knight, Lydia A. De Vilbiss.

GUESTS.

Dr. John A. Ferrell, International Health Board, New York City.
Maj. L. G. Mitchell, Army Dental Corps.
Dr. M. M. Seymour, Canada.

OPENING REMARKS BY THE SURGEON GENERAL.

Gentlemen, I take pleasure in opening the eighteenth annual conference of the State and Territorial health authorities with the United States Public Health Service, and in doing so take the opportunity of thanking you for coming here. In view of the fact that you have already given me the pleasure of addressing you, I will not trouble you any further. We are going to have the pleasure of having the meeting formally opened by the chief of the Public Health Service, Assistant Secretary Moyle, of the Treasury Department.

We are extremely fortunate in having as director in chief of the service a man of such broad, comprehensive ideas, who is in such entire sympathy with the public health program which we all hope eventually to obtain.

OPENING ADDRESS BY THE HON. J. H. MOYLE, ASSISTANT SECRETARY OF THE TREASURY, IN CHARGE OF THE BUREAU OF PUBLIC HEALTH, ETC.

I sincerely wish that all the Surgeon General has said be true. So far as sympathy goes, he does not overstate the fact, because I never became interested in anything in my life in which my heart entered more fully and sympathetically than in the work of the Public Health Service.

Never before in the history of our country has public thought been directed more intelligently toward problems of public health than at present. The fact that human energy, that manhood is the great resource of our Nation, was thoroughly presented to the world when our boys came forward offering their lives in the greatest contest of all time, and such a large percentage of them were found not fit to fight because of physical disability. That condition has called attention to the extreme importance of public health.

When I first came to the Treasury Department I was very much surprised to find public health one of its activities, but public health after all is the great resource of our Nation, and its conservation, protection, and development of paramount importance. The United States Public Health Service, since I have been connected with it, now more than two and one-half years, has more than doubled its activities, chiefly because there has been forced upon the country the necessity of taking care of our boys who offered their lives in defense of our liberties. I had two of them in the fighting divisions of the Army; both came home—thank Providence—whole. I have little concern, as I have frequently said, about the able-bodied such as mine, not because I lack sympathy for them and appreciation of the great sacrifice they would have made, because I do not think there can be too

much done for them; but I have not been concerned much about them in these times when there is abundant work; I can not conceive of anything too good for those who come back disabled. If my boys had come back disabled, I would have felt that our great Government was in duty bound and it should be a pleasure to do everything for them that could make their lives more pleasant, happy, and useful. To me it has been astonishing that more concern has been given to the able-bodied than to the disabled. Not because there has been any lack of sympathy. I do not want to criticize, or find fault, because I know something of the necessity of conserving and protecting that other great resource with which the Treasury Department is also deeply interested, our finances. I must not dwell long on that, as we no doubt all agree, but I do not hesitate to say that there is a duty which you are performing, but which you might possibly perform with greater energy and zeal, in the creation of a public sentiment at home that will compel greater contributions from the Treasury for the promotion of public health. It is a well-known fact that it is easier to get appropriations for taking care of hogs, rivers and harbors, and other infinitely less important resources than that of public health. The only way in which public health can be adequately advanced is by the creation of such a sentiment that there will be sooner or later a popular demand for a department of public health, a representative in the Cabinet of the President.

I understand that there are reasons, and excellent reasons, why there is not such an officer. I do not know what the views of my superior are on that question and I voice only my individual sentiments, which every American should always be free to express. If we can not have such a representative in the Cabinet, I have been wondering whether it would not be possible to have a Department of Public Health and Education combined, incorporating within it those intellectual and uplifting agencies that are consistent with it. What more important energies and elements of our Nation are there than those of education and health, and it seems to me that they might properly go together.

I must not detain you in the performance of your important work. God speed your efforts and the promotion of public health.

Dr. CUMMING. I may say that I have brought from Secretary Houston his best wishes; he was called to New York to-day, hence could not meet you.

The first thing in order, perhaps, is roll call of delegates. Before going into that, with your permission, I had thought of giving a short résumé of the activities of the service this morning, but I think those had better be brought out in the course of the meeting. It seems to me, however, pertinent to call your attention to two phases of public health activities during the past year which are not imme-

diately represented on the program. With your permission I will discuss them.

There are times in every campaign, as you know, in every war, when crises occur at some particular point on the battle front, which rather disarrange your plans and compel you to withdraw forces which you intended to press to other points. Something of that sort at first view has occurred, I think, with the service. I refer to the question of the war risk insurance activities, which have occupied so much time and thought of the service. I confess that when I first came back to America and heard about the war risk and the number of officers it had taken, I rather felt it was a deviation from public-health activities, as some of you gentlemen do. On further thought I think it is a rather narrow view to take of the situation. In the first place I want to correct a misapprehension as regards the service. It did not go out to look for this thing, and it was a baby laid on our doorstep by Congress without any request on our part. But the duty is ours, the responsibility is ours. As the thing opens up more and more I can see in the war risk activities great possibilities from a strictly public-health standpoint. We are looking after 5,000,000 people. You may be astonished to know that approximately one-third of the cases are tuberculosis cases, and when the Federal Government looks out for one-third of all the tuberculosis cases from 5,000,000 of the population, you must confess that there is a pretty fair amount of public-health work involved. Another one-third, approximately, falls under the general head of neuro-psychiatric cases, which are a burden on the local community and which appeal to us not from the standpoint of being contagious diseases, but potentialities of present and future generations. We are trying to get hospitals for these two types of cases particularly, and in the future I have a hope when the peak of the load of soldiers has been passed that these tuberculosis hospitals particularly will be of great and vital interest to us along other lines.

I shall not detain you any further but shall ask for a roll call of delegates. In this connection may I say that while Dr. Schereschewsky and I may have the pleasure of knowing you, we are getting pretty old and may not be able to recognize you here. So, for the benefit of the stenographers, will you please mention your name and State when you arise to make remarks?

(The secretary, Dr. Schereschewsky, called the roll by States, with the result heretofore noted.)

APPOINTMENT OF COMMITTEES.

The following committee on resolutions was appointed by the Surgeon General: Dr. C. St. Clair Drake, Illinois; Dr. J. A. Hayne, South Carolina; Dr. J. B. Anderson, Washington.

REPORTS OF COMMITTEES.

Dr. CUMMING. The next thing is the report of standing committees. The first one is the report on morbidity returns by Dr. Eugene R. Kelley.

Dr. CAREY. Owing to Dr. Kelley's recent illness he was unable to prepare this report.

SANITATION OF PUBLIC CONVEYANCES.

Dr. CUMMING. We will pass to the report of the committee on the sanitation of public conveyances, by Dr. Dowling, of Louisiana.

Dr. DOWLING. This report was made yesterday at the conference of State and provincial health authorities, and we submit this report now as amended by that conference, copy of which we feel sure will be placed in the hands of the Public Health Service. I move the adoption of the resolution and report (motion duly seconded and resolution and report unanimously adopted).

May I ask that this report be published at the very earliest convenience of the Public Health Service so that it may be distributed to all the health officers.

Dr. SCHERESCHEWSKY (in the chair). The next report is that of the committee on interstate quarantine regulations by Dr. John S. Fulton.

REPORT OF COMMITTEE ON INTERSTATE QUARANTINE REGULATIONS.

(Dr. Fulton submitted the following report:)

The substance of this report is a little surprising, and what I have to say I am afraid must be pretty nearly unpremeditated. There is, however, in this country a very great need for some form of interstate notification as a routine procedure, especially concerning the removal of cases of communicable disease and some things have been lost in the time of my memory which could have been and should have been, I think, in some sort, or under some other guise, kept up. I regret, for instance, that the United States Public Health Service has discontinued sending notifications to the State health officers of all States concerning the arrival by sea of persons affected with communicable diseases. Now, I got in my earlier days letters of that sort at intervals. The potential utility of these letters, for the country as a whole, was very high, I think. The security they offered to single States may have appeared somewhat small, but that is the case anyhow when you are dealing with relatively small numbers. I don't know when that practice started and I could not give even an approximate date when it ceased, but it did cease, and it was a form of interstate notification. Now the necessity for interstate notification has been impressed on me personally as well as officially in my experience in Maryland, in the year now current, or within a year of the present time; and I want to describe two of those instances just as illustrating the matter we have in hand which I am supposed to report on.

The State of Maryland found itself several months ago in one of the most humiliating situations that I think could happen from a public-health standpoint. We discovered in the State board of health office one day that an outbreak of scarlet fever had occurred in a large boarding school in one of the Maryland counties; that almost

as soon as recognized, and without consultation with the local health officer or with the deputy State health officer or district or any other functionary whatever, the local health officer of that town—and I may say the incident occurred just outside of the jurisdiction—sent several hundred persons to their homes without notice to anybody at all. A couple of days after that it was necessary for me to write letters—and they were pretty humble letters, too—to 11 different officers in the United States, telling them that persons who might have been exposed to scarlet fever and who should be considered scarlet-fever contacts had been sent into their States by the State health authorities of Maryland. We apologized very humbly indeed for such a thing, which should have been entirely impossible. I hope all of the 11 men who got those letters are here present and will construe what I am saying without very much sign of embarrassment—construe it as a very humble apology for the occurrence of any such incident. There must be five or six of them here now. One thing struck me about that incident. After I had written these letters all over the country it occurred to me that I had been a health officer for 20 years, and I had never received a letter like that in my life. Is it possible that occurrences of that sort and that magnitude have not been noted in any other State, or have we been fortunate not to have such things brought to our attention by the failure of accidents like that to result in infectious disease? That certainly was one of those incidents which makes you think you have no national organization in your State.

The next incident that I want to describe does not put me in quite that position, but it does put another State in somewhat the same position. At the present time we are negotiating a tolerably stiff outbreak of smallpox in one of the counties of Maryland. This originated in a county in Delaware, which was able to drive it out of its borders. The constituted health authorities of Delaware were able to declare their total independence and assume all the responsibility to the rest of the State of Delaware and to all the adjoining States. A very dangerous situation arose, because the event proved if they had inclined to control the situation they were unable to do so, and in the course of several months—eight or nine months—it has just been found protruding itself into the State of Maryland. A thing of that sort should be avoided. I also mention an incident which shows a disposition to find some way of doing this thing right. The necessity of notifying sick people, if need be, arose in this fashion: After the very humiliating outbreak of scarlet fever in Maryland, which involved me with 11 different States, there was an outbreak in a school in Pennsylvania, and the health officer of that district must have thought that he had a duty to perform when he was going to release a lot of children from that school and distribute the pupils. He did it intelligently. He made a segregation before he sent those people off to their trains, he took the names and addresses of those who were leaving, and he wrote me a letter saying that he had sent certain ones into the State of Maryland. Now, everybody can see a fault in that procedure. He had handled the situation in a proper fashion, with the exception that his letter (if he were going to use the letter) should have preceded the act of sending those people into my State. However, it seems a very encouraging incident, indeed, and that too was novel, not unique, but relatively novel in my experience.

The practical suggestions to be drawn from the above incidents are that there is necessity for some kind of interstate notification; and that interstate notification must take its character from the necessities of the case when the radius is shortest, say the movement of the sick people within the State. We have used a practice in Maryland for a good many years which works very easily indeed and it is always possible to move a sick person or a contact person with no more delay than is required to telephone from the county health officer, where a journey is to be begun, to the State board of health and through that to the county health officer where the journey

is going to end, and those things are effected with consent and with knowledge in a very short time indeed, ordinarily in half an hour by telephone, and confirmed in writing. We have been doing those things. The State board of health has regulation authorizing things of that sort. The biggest radius is the diameter of the State; but the movements in general are for rather short distances and they do need to be provided for in simple and practical fashion, because unless they are so handled these transportations occur without knowledge, sometimes by fraud, and sometimes with a great deal of danger. This regulation system has been in operation for quite a number of years in the State of Maryland. It does contain the principle upon which the transportations should occur. That man in Pennsylvania was only about 10 or 15 miles away from the deputy State health officer of the Maryland State district to which those people were going. It wasn't a large school and not a large number of pupils were coming in. I do not know to a certainty whether if the thing had been going on the other way, he would have applied the practice we have in mind, but I imagine he would. However, there is no evidence at the present time that we have a general understanding or general practice concerning such questions as that; and I conceive that country-wide notification through the Public Health Service is nothing like as laborious as the size of this country at first blush would lead you to conceive.

I conceive the bulk of transportation and the notification involved are of short radii and cover a very short time. Of course we want interstate notifications for the longest radius and the longest time. We want to know about current morbidity at all times. Not all over the country, necessarily; I don't care about California. I do care about Virginia and West Virginia and Delaware and these things I think should be provided. I am inclined to think they will not be provided—not perfectly, nor with even a very high grade of efficiency—until the United States establishes in this country an area of registration for sickness. I don't know how many States do register morbidity with sufficient approximation and completeness to be considered to have what we would call a registration area for sickness. I am sure I could name seven or eight States that could do it. It doesn't matter how small the group is, theirs is the duty of beginning this whole movement, and all of these simple questions can be handled easily enough inside of the State and can be handled across State borders readily. So far as this can be called a report at all, that seems to be one of the elements of it. The creation in the United States Public Health Service of a registration area for morbidity reports is very important. Current reports we get demonstrate that a registration area could be created. If it were, and if some simple practice for all the States for short radius were outlined, it is merely a matter of time and experience before we would be doing the thing in the large, just as well as we are doing it in the small, area.

(Dr. R. B. Norment was requested to open the discussion on the interstate quarantine regulations.)

Dr. Norment. I am rather embarrassed by being asked to discuss a question like this before a group of such experienced gentlemen, as I have had very little experience in doing this sort of work. I think, though, that all of us realize that State boundaries are only imaginary lines, and that certain things go on within the borders of States that have a very direct application across the borders in adjoining States. This instance of scarlet fever that Dr. Fulton has just mentioned is, of course, a thing which may happen in any place with a health officer sufficiently untrained in handling situations of this character. This sort of thing is probably going on continuously, causing inter-

state spread of communicable diseases. If a disease is being brought across a State border, there is often not enough cooperation between the field officers of the State health departments concerned, where they have such officers, to bring about a satisfactory interchange of information concerning the incidence of this particular disease. Of course, this implies a certain amount of Federal responsibility, as these are interstate matters. Nevertheless, it seems to me an arrangement could be made whereby closer cooperation could be obtained between the field forces of the State departments of health in regard to the interchange of sanitary information without transmission through the United States Public Health Service. It is often a rather cumbersome procedure to notify Washington and have Washington relay the information. Very often it is extremely important, especially if you have actual information concerning interstate movements of a case, that you get the information to its destination immediately.

I have in mind an instance of a case of smallpox traveling on a train of the Pennsylvania railroad. I learned that the case was on a certain train. I knew the time at which it would arrive at a certain point. I had a health officer meet that train and notify the conductor. The man was apprehended and taken from the train. Now, this, of course, is a somewhat unusual occurrence, but in all probability it is much more common than we realize. I have repeatedly had occasion to notice the progress of a wave of diphtheria or measles, or other communicable disease, from county to county within a State, and from the county of one State to the adjoining county of another State. This arrangement, which Dr. Fulton spoke of, between the State of Pennsylvania and the State of Maryland has worked out admirably in several instances. In one, a contact with a case of smallpox, the man was apprehended and the local health officer within whose jurisdiction he lived kept the man under observation until his period of incubation had passed. Interstate notification is, of course, an immense proposition, and would require an immense amount of work. Just how it could be done and just where the responsibility would lie, whether in volunteer cooperation of various health officers, or whether it would be necessarily under Federal supervision, remains to be worked out. It certainly seems that this idea should be applied intimately in border counties of States, and there does not seem to be a great deal of reason why it should not be applied at an early date, even if it is not perfectly carried out. It will be difficult to get it in a state of perfection, but just because it can not be put into a state of perfection immediately is no good reason why it should not be inaugurated on a larger scale than at present, if possible.

Dr. ANDERSON. It appears to me that if we wish to be practical we need to coerce the medical profession into reporting the communicable diseases coming to their attention. If they did this punctually, not very often would a person with a communicable disease be on travel status.

It seems to me that the chief danger lies with "carriers," and those types of infection which, because of their very mild symptoms, arouse no suspicions in the minds of the laity concerning the possibility that the slight indisposition in one individual may assume grave proportions in a susceptible contact.

I am convinced, so far as the subject relates to the State of Washington, that the profession does not regard the reporting of communicable diseases with sufficient gravity. And this applies to other vital facts in connection with health activities.

I believe that the United States Public Health Service could render valuable aid in this direction by instituting a campaign in medical schools, favoring the adoption in the several curricula, of lectures on the importance of the prompt reporting of birth and death returns, as well as communicable diseases—this both for scientific and civic reasons.

In the matter of infectious diseases, prospective doctors (medical students) should be instructed concerning the importance of reporting not only communicable diseases, but the suspicion of such diseases. To illustrate, report to the health department a child with a slight coryza and faintly injected conjunctiva as suspicious of measles. "Pass the buck," if you please, to the health officer.

We health officers might profitably visit the medical societies and urge one society to enter into friendly competition with sister organizations for approximating 100 per cent in the reporting of all necessary vital facts.

Dr. WELCH. I was impressed by the address of Dr. Fulton, that he was not especially interested in California because of the distance. Last summer there were some visitors from the State of Washington in Alabama who contracted smallpox while there. They were immediately isolated by one of the health officers of one of the counties, and in the night time took the train back to Washington. As soon as I could ascertain the facts and get the address of the individuals I notified the health department of the State of Washington. We have the habit of following the lead of my distinguished friend from Louisiana, of notifying each other of any outbreak of the communicable diseases in border States. Whenever there has been an outbreak of a new case of bubonic plague in Louisiana, all of us in adjoining States have been notified by the health officer of Louisiana. Recently when there was a suspected case of bubonic plague in Mobile, I wired all the health officers of contiguous States. I was

under the impression that we all had such an understanding and that we were all following that line of procedure.

(Moved and carried that the report on interstate quarantine regulations be accepted.)

Dr. CUMMING. The next report of the standing committee is that on rural sanitation by Dr. W. S. Rankin, of South Carolina.

Dr. RANKIN. Mr. Chairman, I have asked Dr. L. L. Lumsden to make the report.

Dr. Lumsden made the following report:

REPORT OF COMMITTEE ON RURAL SANITATION.

I have had for a long time a misconception about the duties of the chairman of a committee. Until this morning I supposed that the chairman was the one to do the work. I don't know why Dr. Rankin didn't make the report. He knows exactly what to say and can say it much better than I can. The members of this committee have reached a definite agreement about what should be the program of the members of this conference on rural sanitation. This matter has been discussed before this conference at each meeting for some years past, and I don't think it is necessary for the committee to go into any of the elementary details about the importance of rural sanitation in the United States and the need of marked advancement in this work. Recently the Public Health Service office of Rural Sanitation has sent out a questionnaire to all of the States, with a view to ascertaining the extent of whole-time health service, local health service in the rural districts of the United States. This questionnaire applied to the date January 1, 1920. There is a place on the program a little later, Mr. Chairman, for these data, but I think the data in a way will serve as a foundation for a discussion of the recommendation which this committee will make, and so with your permission I will submit them at this time.

This questionnaire was an inquiry to ascertain how many rural districts in the United States, as of January 1, 1920, were provided with whole-time local health service. The answers to this questionnaire have been received now from all of the States, so I think the data are as complete as we are able to get them. There are, according to the reports received, in the United States, 98 rural districts, composed in all instances except two or three, of counties which are provided with whole-time local health officers.

Think of it, only 98 out of some 2,800 counties wholly or largely rural in the United States are provided with whole-time county health officers. That is about 3.5 per cent. That is a sad report of progress in this field which is recognized by everyone who knows anything about the subject as of vital and urgent importance. Of the 98 counties provided with whole-time county health officers there are 22 in which the health officer serves alone; that is, he has no official assistance, no sanitary inspector, no health nurse, and no clerk. He is monarch of all he surveys in a health field with an area of about 40 or 50 miles long and about 20 or 30 miles wide and with a population of 20,000 to 50,000. All of us who know anything about public-health work know that a one-man health organization in such an area is inadequate and is suggestive of one trying to feed an elephant with a spoon. Among the 76 counties with whole-time health officers in which the health officer has assistance, the assistance consists in some instances of one sanitary inspector or one health nurse, and in a few instances of more than one sanitary inspector, or more than one health nurse. This gives a summary of the findings of the survey of the counties of all States. This is the situation so far as local health service is concerned. In the States, the State provides whole-time district health officers who look in a very general way after health con-

ditions in the 8 or 10 or more districts into which the State is divided, but they are not included in this summary. This summary applies only to the health district which has a local health officer paid in whole or in part by the county, township, or district in which he works.

The United States Public Health Service has been endeavoring for several years to aid the State and local health departments in the advancement of rural health work. The program has been outlined in previous conferences; it is based on the principle of cooperation. The United States Public Health Service goes into partnership with the State health department and with the county, to establish and maintain a local health department which is definitely expected to carry out with a reasonable degree of adequacy the most important phases of health work indicated in the community. Our road in this direction has been rather rocky. The work began with an allotment made from the fund for the investigation of the diseases of man in 1914. In the following year a specific appropriation was made by Congress to the amount of $25,000 to try out what Congress regarded at that time as an experiment. We submitted reports to Congress. The gentlemen in Congress at that time appeared to think that the experiment was proving fairly satisfactory and they increased the appropriation for this work during the fiscal year beginning July 1, 1917, from $25,000 to $150,000. This was really encouraging. That increased appropriation was granted by Congress before war was declared. The hearings on the rural sanitation item were held before a committee on appropriations in the House having charge of the sundry civil bill. That bill was passed by the House before war was declared. Thus the increased appropriation for rural sanitation was granted on a peace-time basis. The war came and the program of work formulated was interrupted; most of the money had to be used in the areas around the national camps and in the areas around the most important war industries. The same amount, $150,000, was appropriated for the following fiscal year beginning July 1, 1918.

After the active period of the war was over we hoped to obtain at least that much money to distribute among the States for cooperative county health work. We were disappointed when Congress, after what appeared only perfunctory consideration of this vitally important matter, reduced the appropriation to $50,000 for rural sanitation in the present fiscal year beginning July 1, 1919. With this $50,000 we have strung out the work as far as it would go to what appeared the very best possible advantage. Against the $50,000 allotted to counties, 30 in number, in which we have entered into cooperation in the present fiscal year, there has been appropriated from State and local sources an amount aggregating over $225,000. The detailed results have been highly satisfactory. We thought, with that showing and with the increasing demands for our cooperation in this field, that Congress might see its way to grant an increase in the appropriation which would enable an increase in the activities. Again, however, we have been disappointed. The House Committee on Appropriations in Congress recommended only $50,000. An attempt on the floor to increase the amount to $150,000 was voted down and the bill passed the House carrying only $50,000. Thus we shall have only $50,000 to assist State and local government in cooperative rural health work in the present fiscal year.

I have gone into these details because I think from this history we must realize that there has not been put behind this request of the United States Public Health Service and of the Treasury Department for increased appropriation for rural sanitation, the popular demand which is absolutely essential to get the sort of reaction necessary to secure a reasonable increase in the appropriation. Our estimate for rural sanitation in each of the fiscal years 1920 and 1921 was $500,000 and the amount appropriated was $50,000. Now, if the work in the counties in which the cooperative plan has been carried out had met with failure I think we should be reconciled with the attitude of Congress toward this business. But in every one of these counties the success stands

out strikingly, very encouragingly, and we can measure in dollars and cents the value of this work. I think we can safely conclude that this work—this cooperative county health work—has well passed the experimental stage, and the question which we must answer, which the people must answer, and must answer through their representatives in our legislative bodies, is not whether this work is worth while—everybody grants that—but whether the National Government should take part in this kind of business or not. That is the question which this conference, I think, should express an opinion about. It is the one persistently raised in Congress. Without further disastrous delay the people of this country should decide whether the National Government should take part in this business of health promotion and disease prevention or not. Congressmen apparently opposed to the work eternally ask, "Why should not the States, the counties, and the individuals do these things for themselves"? If the National Government has a right to assist communities in any line of activity it surely seems to have a right and an urgent call to assist in rural sanitation.

The Federal health agency can not conduct this work in a reasonably businesslike way if it must continue to depend each fiscal year upon a new Congress or another session of Congress determining along in June, sometimes not until July, how much money is to be available to invest in this enterprise. To have to make our contracts after the fiscal year has begun is a serious handicap. To overcome that difficulty a bill was introduced two or three years ago by Representative Lever, providing for a continuing appropriation to be allotted to States each year on a basis of population for cooperative rural health work. Until we get some comprehensive legislation of that kind this work can not, according to every element of common sense, be conducted on a satisfactorily businesslike and economic basis. Therefore the members of the committee on rural sanitation of this conference have agreed to make to this conference the definite recommendation that those participating in this conference discuss and decide upon what kind of legislation is needed and especially whether that contemplated by the so-called Lever rural health bill is of the kind needed. This cooperative rural health work is in line with the general principal of Federal aid extension which is being carried out apparently with success in several different fields of activity of the Government. It seems more logical for the Federal Government to extend aid in the prevention of the spread of communicable human disease than in any other field in which it is engaged in the application of that principle. Communicable disease control is not only of local importance, but also of State-wide and Nation-wide importance.

Now, it does little good, if the sense of this conference should be that the National Government should take part in this business, for the conference to pass a resolution to that effect and stop with that. It does but little good if one of you writes to a Congressman saying that you hope he will support the sundry civil bill when it comes up. Hearing from you as a health officer, he may say, "Oh, these fellows are always trying to do more and more," and if he hears from no one but you, you can not reasonably expect him to get off his coat and go to work to get enacted the kind of legislation requested. If we mean business in this matter we must go back to our States and start a constructive campaign to bring about the kind of sentiment which Secretary Moyle referred to as necessary to move Congress. The thing to do is to appeal to every organization which properly can function in such a matter and to every individual whom you can reach to let the Congressmen and Senators know what is the sentiment of the people in your respective States toward this proposition. Until Congressmen know that, and know it in clear-cut terms without any uncertainty, we can not expect them to enact the legislation which is absolutely essential before the Public Health Service, as a Federal health agency, can give you the assistance and cooperation which evidently is needed, which we should like to give you and which I personally think we should give you.

Dr. FREEMAN. I am very sorry that this cross section of Dr. Lumsden's was taken on the 1st day of January. As most of you know, we expected to double this 98 whole-time health officers on the 1st day of January. Unfortunately, we were not able to carry out this program. I am very glad to tell Dr. Lumsden, however, that we have added since January 1, 30 whole time county health officers to the 98 he has listed. Of these only one man is working absolutely alone. I am also very glad to report that the system is working with increasing efficiency and satisfaction. There was a very real question in the minds of many of our people whether a single man working in a county would be able to give as immediate and efficient service as the 15, 20, or 25 local health officers had been able to give. That question has been answered in the affirmative and so positively that we are having no further difficulty. The only difficulty we are encountering is to get these 30 full-time health officers to set up a constructive practicable program and carry it through.

So far as we are concerned in Ohio, I think there will be no difficulty in expanding this system until the whole State is covered. We have some very interesting variations. We have in one case two counties being served by one whole-time health officer with a separate staff in each county. We have in five cases a county health officer serving both the city and the county. That is working out very satisfactorily. They maintain two sets of employees, one supported by the city and one by the county. We have done this in Ohio without any Federal aid or any outside aid of any kind. But like all missionary enterprises, we take money where we can get it, and I think we could use Federal money to good advantage. I think all of us appreciate fully that the future of health work in this country depends upon the establishment of whole-time service in the rural districts.

You can look at it from any angle you please, but any man who studies this subject must come to the conclusion that we will never have a national health program worthy of the name until we have a universal system of full-time health service. In some States, as in the Northern and Eastern States, the economic resources of the States and counties are adequate to support such a system without outside aid. There are, however, in large parts of the country counties and States which are unable economically at this time of high cost of gasoline, automobiles, victrolas, pianos, and other necessities of life, to support luxuries like full-time health officers. The logical source of aid is the Federal Government. I believe with all my heart in the use of every legitimate available means to forward this thing. Some of us may have our own ideas about State and Federal rights, but I do not let that stand in the way of a chance to get a full-time health officer. I think this conference, if it is really in earnest about the promotion

of the public health, must support a proposal whereby we can do for health what the Federal Government is doing for roads this year. If 10 per cent of what is spent for roads could be applied for health on the same system of Federal aid, we would within five years have a universal system of full-time health service. It is a question of expediency and a question of earnestness of purpose, and I for one want to back Dr. Lumsden, as I have been in the habit of doing for the last 10 years, and add a very hearty amen to everything he has said.

Dr. Harris. The question of rural health administration is one which vitally affects everybody interested in public health, and, especially, every health officer, whether he represent a city or a rural community. It is assumed that we are all agreed as to the essential value of rural sanitation, and we will therefore not argue as to the details of the program suggested by Dr. Lumsden, but direct our thoughts to the significance of his statement that our legislators are against increasing the Federal and State appropriation for rural sanitation. Since we agree as to the colossal importance of public health work in rural sanitation, it becomes merely a question of what methods we shall pursue to realize our aims in this field. You can not bring about action that will be valuable and serviceable unless you have a rallying cry that will strike a sentimental chord. During the war, you know, our health propaganda was aided tremendously by the fact that we brought home to the public, and to our legislators as well, that it was necessary to conserve the welfare of every individual in this country, so that our conduct of the war would be successful and efficient.

It was upon the basis of efficiency and the necessity of meeting a national crisis that we made a forceful and successful appeal, and to a considerable degree won the support of many for our health program. At this time, when everyone is stressing the need of increased production, and when those in authority are predicting that famine threatens the country, because production on the farm is limited, it is appropriate and necessary to bring home to people at large, to the business world, and to legislators, that limited production is due in no small measure to the wastage of energy and life upon the farm which is traceable to preventable diseases, and that the loss of human power which these diseases cause results largely from the fact that our rural sections show an appalling poverty of resources for protecting the health and lives of those on the farms. Where even partial provision is made to guard the health of the rural population, those officers, upon whom the welfare of the residents on farms in every community depends, are not capable of doing their work, principally because they lack the necessary funds and assistance. It is

timely to impress the importance, and to bring home the necessity, of conservation of man power on the farm and to make that need felt as the paramount one by associating the present deficiencies in production with the struggle to protect man power from the effects of diseases caused by poor rural sanitation. We must tie up closely the necessities of the moment as they come home to everybody through the effects of the high cost of living, wherever they may live, and so capitalize the present lack of food products and of farm help, and focus the light of publicity upon these facts for the attention of those who have never thought how important it is that those living in rural communities should be healthy, if only that they might more efficiently supply the demand of cities and of towns the world over for adequate food. We must bring it home to legislators that the unsatisfied demands of the farmers for help upon the farm to answer the call of the cities for food can be met successfully by preserving intact the energies of those already on the farm, so that their numbers may not be depleted by preventable diseases which now claim thousands of victims among the rural population.

We can gain a great victory for rural sanitation, not merely by passing resolutions, but by a forceful scientific expression of opinion coming from this board of public health officers, concerning the welfare of the people of the country, and its relation to the welfare of the rest of the world whom they serve; and we can gain support by arousing the newspapers of the country to take note of the situation, and see the necessity of adequate health appropriations to conserve the welfare of the rural population, as a direct help in meeting the needs of the country as a whole.

We lay too much stress upon communicable diseases, failing to realize that, important as they are, emotion and sentiment can not very effectively be developed or crystallized on that subject. The thing we feel of transcendent importance at the moment is the need to assure the people, living in cities or in rural communities, that production must and can be maintained only by a liberal policy toward rural sanitation, in the same manner as we stressed the relation of health to the welfare of our country and its Allies during the war. And so I would urge that there be an aggressive and emphatic expression of opinion coming from this body of health officers, representing all shades of thought and all parts of the country, calling attention of the country at large to the fact that in this moment of national necessity there is at least one means of helping out, by greater attention to rural sanitation and by large appropriations for rural health administration. And for the purpose we must arouse and secure the support of our newspapers throughout every part of the land. Let us not forget newspaper publicity on this subject in

order that our expression of opinion may become vocal and make itself heard even in the chambers of our National and State legislatures. If adequate appropriations for preventing the untimely death or unnecessary sufferings of thousands of our rural population can not be secured by an appeal to humane sentiments, then let the appeal come through the economic motive.

Dr. HURTY. There is one energy or force which we may use in advancing the public health cause which must not be forgotten; that is the force or energy of the business men. Make the business men understand the importance of all public health causes by bringing forcibly before them the facts pertaining to health and business and a force will be enlisted which will be irresistible. Very nearly all we have been able to secure in Indiana in the public health line has come through the business men, not by appealing to their avarice, but instead by appealing to their sentimental and emotional nature. We did not realize for 10 or 15 years that we must appeal to sentiment, just as the former speaker has contended; otherwise we are liable to fail. We, and I mean by "we" the Indiana State board of health, secured the support of every individual Congressman for the Lever bill, unless perchance they went back on their promises, which might have happened with one or two. We first appealed to the business men's organizations at home and sent their resolutions to the Congressmen. We also appealed to many farmers' institutes and sent their resolutions to our Congressmen. These told the Congressmen how to vote if the Lever bill came up. We insisted the Lever bill was a business proposition and, furthermore, it had a bearing upon the higher qualities of the mind and would be uplifting and add to our enjoyment of life if it were passed. We know that a large proportion of the insane women in every State come from the farm, and this fact was used in arousing sentiments and emotions of business men so as to direct their attention and finally their energies toward the passage of the Lever bill. We told them it is disease that brings insanity; it is disease that brings quite all of our miseries and sorrows and causes us to fail. We asked all the business organizations we addressed, when urging them to support the Lever bill, "Do you wish to stop the flow of insane women from the farm into the insane asylums? Do you wish to see farmers more efficient and happy? If you do, then you will support the Lever bill and will further do all you can to raise the health on the farm."

The business men's organization at Indianapolis appointed a committee to see that our Congressmen and Senators were informed that the Lever bill was good business, and further, that it was more than good business. It would make people on the farm not only richer but also happier. The Indiana Legislature promptly made an appropriation which would equal that appropriated by the National Gov-

ernment, and it stands now upon the statute books ready to be used if ever the Congress takes action. Indianapolis is in the seventh congressional district, and our Congressman, Hon. Merrill Moores, was so impressed with the arguments for the Lever bill that he worked for it as well as voted for it. When at home one time he called at my office and expressed his interest in the cause of the public health and positively stated that he would work for every reasonable health bill that ever came before Congress while he was a Member. Mr. Moores was renominated and I hope he will be elected. In our conversation he stated that he would work for the bill and support it despite the fact that a budget of $5,000,000,000 was placed before Congress. He said: "I do not know how we can raise this vast sum, and a great deal of it is unnecessary, but rural sanitation must be attended to." Continuing, he said, "The budget will be cut down where the Congressmen least understand. I shall try to make them understand, so far as I can, that it will not be economy to cut the budget when it comes to the Lever bill." We have some money which can be used for rural sanitation, and would have had a goodly sum had the Lever bill passed.

May I tell you briefly what we are doing for rural sanitation at this time. Our Divisions of Tuberculosis and Child Hygiene are mounted on wheels. I mean that each division is provided with an automobile truck and touring car, which is fully equipped with exhibits, moving-picture machine, stereopticon slides, moving pictures, illustrated exhibits, and all things necessary to make their work a success. These traveling divisions give all their time to the extreme or back rural districts, those districts which have had little or no attention paid to them up to this time in the line of public health instruction. The tuberculosis outfit carries an entertainer, who sings, tells stories, makes recitations. Music is further supplied by a good victrola. The automobile trucks are provided with Delco dynamos, and thus always have an electric current for their moving pictures, for lighting schoolhouses and churches, and other places where exhibits may be held. The localities to be visited are notified beforehand, and the rural part of each township is well stirred by the work done. Imagine one of these divisions, with flags flying from the automobiles, entering a town and blowing a trumpet and announcing its coming. The meetings always have big crowds, and in almost every instance a schoolhouse or church will not hold the audience. When the weather is good the meetings are held out of doors, the curtain to receive the pictures is put against the side of a house, the lawn in front being used for the audience.

Our Tuberculosis Division lays emphasis upon the fact that 80 per cent of consumption is contracted in childhood. The matter of giving milk and proper food to children is thoroughly emphasized,

also the importance of fresh air, cleanliness, and cheerful surroundings. We feel we are getting excellent results, and many letters are written by the rural dwellers commending this work. Our pamphlets are distributed only to those who ask for them. The speakers tell their listeners the pamphlets are on hand and will be given only upon request, but will not be generally distributed. We feel that by pursuing this course more good is done than if general distribution, with its attendant very considerable expense, were adopted. Again, I wish to say, in your public health work, and when you wish to secure an appropriation, don't forget to secure the influence of the business men. Make it plain to them that the business of the public health is the most important business that is before the business men. They will quickly grasp the fact that there is economy in the public health, that there is efficiency, and also that there is happiness. It is to the business man's self-interest to see better health on the farm, and it also appeals to his sentimental and moral nature.

Dr. McCormack. I will either have to make a speech here now or a explanation to the health officers when I get back home. Whenever Dr. Lumsden has made a talk on rural sanitation we always wish to express our commendation of it. I want to tell you one other thing to add to Dr. Harris's and Dr. Hurty's remarks. They state we have to lay facts before the people of the country and Congress if we want their support. Now we have in the country our rural health department which we are all agreed must be well kept and where correct statistics have been kept; we have enough facts to convince any business man, or even any Congressman who is not a business man, of the business advantage to be derived from health work. In Mason County, with the cooperation of the Federal Government, for the past four or five years we have conducted a full-time health department. We are able to demonstrate from the statistics of this department, published from year to year, the cost of preventable diseases. We have found that the number of unnecessary premature deaths has been reduced from something over a million to something less than 200,000 per year at a total investment of less than $12,500 per year. Now that is good business, and that is the sort of statement we need to present to Congress, with the exact facts explained. This, in spite of the fact that we have gone through two epidemics of influenza, and in spite of the fact that the physical conditions of the city of Maysville have prevented the improvement of the water supply, which has caused continued epidemics of typhoid fever. Over 60 per cent of the houses have sanitary privies and are using them, and the sanitary inspector sees every one of those sanitary privies in operation at least once every three months. They were building 30 new privies last week. The people of the county are furnishing every particle of the material of which they are made, every particle of the

work, building them themselves, and doing this because they found it worth while. The health work in Mason County has demonstrated not only what they can do, but shows definitely what we have failed to do, and I believe such a showing will get money from any appropriating body. In Kentucky, from the facts gathered and set before the legislature, they got an appropriation of $325,000 for the county health department. As soon as we get Federal aid (and God speed the day when Federal aid may come) we will get better health departments, bigger ones, and run on better standards. It is a pleasure to commend the United States Public Health Service here and now for the splendid health work they have helped us to do in Kentucky.

Dr. NICOLL. I feel very much encouraged by Dr. Harris's remarks. I do not know that you understand the significance of them. Dr. Harris is not under the jurisdiction of the State health department. I do not suppose Dr. Harris would know a farmer if he saw one, and yet to us, who have had more to do with rural districts, it is encouraging when a representative of the New York City health department realizes that New York is interested in a rural health problem. I do not know how much sentiment there is about this. Dr. Hurty stated yesterday that man's impelling motives were based on love and hunger. I wonder if the latter isn't the impelling motive which drives the city of New York to take interest in this matter rather than love? However, it does not make any difference what the motive is. I think when the city begins to take an interest in these matters we shall get a great deal further in the problem, as Dr. Harris has said.

Dr. FERRELL. Encouragement of rural sanitation is a task which makes a strong appeal to the International Health Board. At the present time the major part of the financial aid which this board is giving to legally constituted health organizations in the United States is dedicated to the work of developing and extending county health programs. During the past year our organization somewhat enlarged the amount of its appropriation for cooperative county health work, because prospects were hopeful that some measure, such as the Lever bill, would make possible the joint cooperation of Federal, State, and county Governments in a county health program operated entirely with public funds. Since only 3 per cent of the counties of the country, however, have as yet seen the benefits of rural sanitary work, it would seem that a great deal of further demonstration in this work is required if its influence and importance is to be appreciated to a degree sufficient to secure the funds necessary for extensive rural programs. Where county work has been done it is gratifying to find how generous the State legislatures have been and how readily the county authorities will provide creditable appropriations. Ofttimes the county funds range from $3,000 to $5,000 or $6,000 a

year. I believe that this work will be the means of making rural public health work in this country what it ought to be and of unifying all branches of government, Federal, State, and local, in an enterprise which will yield definite, tangible results and win greater confidence and greater appropriations for the work.

Dr. Carey. I do not want this discussion to close without placing Massachusetts on record as favoring this movement, heart and soul. I believe our political and geographical status is such that we will not be benefited very much, but that will not prevent us from favoring any measure that will be of benefit and available to other States.

Dr. Goddard. I do not want this question to pass without placing Texas on record as favoring the movement. We have this year, since January 1, established five county departments of health. The work is just getting under way and we are entirely pleased, and so are the people, with the movement.

Dr. Schereschewsky. I do not think we ought to close the discussion without having it firmly in mind that any Federal measures regarding the rural sanitation are not local measures but measures which are essentially destined to further the prosperity and happiness of the entire United States. I do not think Massachusetts nor any other State, no matter how industrial it is, can deny the fact that if it does not produce food it is dependent upon other States for its food supply and must sell its manufactures to the rural States. Consequently, this matter of rural sanitation is one which affects the whole country. We are faced with an acute food shortage, as you know, and few of us realize the enormous losses in rural sections from lack of health conditions. Take the problem of malaria alone, which causes an annual economic loss of not less than $1,000,000,000. If we should succeed in eliminating malaria alone it would add, I am certain, at least 30 per cent to the agricultural produce of those States where it now prevails.

Dr. Hayne. I am not making that same dramatic entrance made by that health car in Indiana. This seems to have developed more or less into an experience meeting and a statement from each State as to what it is doing. Far be it from me not to allow South Carolina to have representation in this meeting as to what we are doing. We have whole-time health officers, very few of them—a little more than 3 per cent, though, of the counties are represented in the State, so we are holding our own in that respect. We do not believe in county health officers feeding the elephant with a spoon, therefore we have not provided any spoons, but use a bottle. There are seven counties in the State that have miniature county health departments, and that is the only way in which you are going to succeed in doing anything toward elevating the health standards of the county. The Angel Gabriel might come down and blow his

horn in some of the counties in South Carolina and blow that horn riding in a tin Lizzie and he would have no effect in raising the health standard of that county; but if you have a whole-time health officer, an educated man who knows what he is talking about, is not too optimistic, is reasonably truthful for a health officer, does not more than quadruple statistics when presented, then you may have what they have in Kentucky—a sanitary closet, four of them, for each inhabitant of the State of Kentucky. We have been listening to reports from Kentucky for seven years; each year we have known that every inhabitant was provided with four sanitary closets. The modesty of Kentucky inhabitants is such and these closets are so well concealed that you may travel over Kentucky without perceiving one. Getting old as I am, I am getting more or less pessimistic. Pessimism depends a great deal on the—oh, well, I won't go into particulars, but there are some facts, outstanding facts, that must confront any one who talks about rural sanitation. One is its enormous cost. If you take my little State as properly presenting as cheap a form as you can get, it costs or would cost $1,000,000 annually to put on in each county of the State a full-time county health organization.

My State has about sixteen hundred thousand or seventeen hundred thousand inhabitants and bearing a very small proportion to the population of the United States, so that the cost of rural sanitation properly carried out in the United States will run into figures that would be even appalling to a Democratic Congressman, and I believe from a Republican standpoint that the Democratic Congress is responsible for all the evils both in this world and in Mars. If, however, we can get sufficient aid from the Federal Government to put on demonstrations in certain counties that will really demonstrate, so that the people rise up and demand funds from the legislature, having seen those demonstrations that one county requests, then we will accomplish something. So far as the voice of the people in asking for these things is concerned, it is so faint and so far away that we have to present the requests with a megaphone, the megaphone usually being the State health officer. If Dr. Hurty is right in his statement, in gathering statistics in regard to the amount of money that is saved by keeping people from dying, we would have to exclude all the morons, all the feeble-minded, all the vicious that are saved, because health work saves them as well as others and we could count as gained only those saved that we thought were worth while in the community. You remember the experts of the Army after carefully studying the mental caliber of the men assembled in the Army decided that physicians and teamsters had exactly or about relatively the same amount of mental development, so it may seem to the people that we had better not

save all of the physicians. This is merely persiflage, but I want to get the point. I am also an uplifter and the sign manual of the uplifter is to use the expression "economic importance" and the gesture "I leave with you this one thought." If you do that you are a successful uplifter, otherwise not. I wish to leave with you this one thought: It costs money to have public health, and it takes a first-class liar to present statistics to Congress so that they will be received.

Dr. McCormack. I should like to suggest that an assistant surgeon general in the department of lying should be added to this bureau, and I would like to recommend that Dr. Hayne be nominated for the position.

Surg. Gen. Cumming. Up to the time I heard Dr. Hayne make that last remark I was going to say that we were going after this thing and would get it in the next session of Congress, but I hesitate to say that unless we call on some of our friends here present to help us. Just about a day or so after I got here I began to snoop around to see where we stood on the appropriation question. I soon found as far as I could tell, there was absolutely no chance of raising the limit on the rural sanitation problems this year, but I think we have very excellent reasons for thinking that the next session of Congress we are going to be able to do something along that line and that we are going to have very material support in the present administration in doing so. Secretary Houston is vitally interested in this subject and we are lucky in having him in charge of the department. In spite of what Dr. Hayne said, this question of getting definite data is going to affect committees of Congress the next session. We know the personality of the members. They are going to do something for us. You have got to help us out, and do that by getting definite data about definite counties. Dr. Lumsden will help you do it. By getting definite data and definite statements in definite counties, then I think we are going to get appropriations from Congresss.

Dr. Flannagan. Many of you want a case in point to refer your Congressman to and you want to get some one here near Washington. I refer you to the work Dr. Cox has done in Arlington County and Fairfax County, across the river where you can see the work being successfully done.

Dr. Lumsden. I would just like to say that the committee will submit a resolution for consideration by the conference.

Dr. Cumming. The next committee report is that of the committee on trachoma, by Dr. John McMullen. I just had a wire from Dr. McMullen that he will be delayed until to-morrow, so we will hear the progress report of the board appointed by the Surgeon General to study the problem of sanitary disposal of human excreta in unsewered communities, by Prof. C. W. Stiles.

SECOND INFORMAL REPORT TO STATE HEALTH OFFICERS.

(Prof. C. W. Stiles submitted the following report:)

During the past year the board on excreta disposal has continued work along various lines and, as was to be expected, has been more analytical or destructive than synthetical or constructive. A subject which has been studied for so many centuries with so little real progress is so complex in nature that constructive progress is slow.

Administration versus installation.—As studies of existing local conditions progress, the conviction becomes more firmly founded that administration of privy sanitation has not kept pace with installation, or to express it in other words, that it is easier to induce the public to build privies than it is to induce municipal administrators to see that they are properly cared for after they are built. The public responds well to an appeal, but local authorities do not always carry out their part of the work, hence many campaigns have not returned to the citizens a lasting health protection commensurate with the money expended.

For many years the conception prevailed that a privy concerned only the householder, and it took long and tedious labor to induce people to surrender part of their rights over this structure to the public good. Experience now shows that in many instances public officials have not properly administered the privy trust placed in their hands and that installations have deteriorated because of lack of a privy conscience in certain public officials. At least part of this condition is undoubtedly due to changes in local municipal administration due to the game of local politics and to changes in personnel of local health offices due to financial and to political conditions.

The tendency is to demand a privy which requires no supervision, but this desire will never be realized, and we had better face the fact promptly that privy administration is as important as privy construction. No type of privy will give satisfaction unless it is given proper attention, and in this connection I would invite your attention especially to the subject of the—

Necessity for better supervision over scavenging.—Privy sanitation is a cooperative affair. The public is called upon to cooperate by paying out money to provide the privy and to obtain proper scavenging. The health officer is paid by his clients, namely the public, to cooperate by telling what kind of a privy is acceptable, by inspecting in order to determine the frequency of necessary scavenging, and to cite his employers and clients to court in case they do not provide a prescribed privy. The scavenger is paid to scavenge and to dispose of the contents.

Extensive campaigns are carried on at public expense to instruct the householders as to their duties; but I would suggest that there is not adequate provision for giving to the public the tangible proofs that either the health officers or the scavengers are giving proper service in return for the money paid by the public.

The average scavenger I have seen turns the city with a pail system into a city-wide, open privy by scattering and spilling the can material along the streets from one end to the other, and many local health officers exhibit less enthusiasm in stopping this nuisance than they do in threatening to prosecute householders for not complying with privy construction regulations.

The question arises as to who is responsible and how the condition can be bettered.

Primarily it is, of course, the scavenger who commits the nuisance, and with the night-collecting system the nuisance will continue to a greater or less degree, for as long as given local regulations prescribe that the scavenger will be fined in case he does this work during hours when he can see to do it properly, he will continue to do it improperly.

The next responsible persons are the inspectors. Many men of this calling are, in my experience, unfitted for their job, have little or no interest in it, too frequently

make up their reports at home, by routine, instead of actually inspecting privies and reporting upon actual instead of theoretical findings, and too frequently they are purely political appointees. If you reply that you know inspectors of a higher type, the answer is that I also know good inspectors and that the foregoing criticism applies to the average, not to the superaverage inspector.

Highest in responsibility comes the health officer who too often leaves matters to the inspectors and does not take a first-hand interest in what is going on in the back yards. In other words, he is not sufficiently active in his supervision.

Dr. Rankin's North Carolina law seems to be the best of any of the State laws we now have on the privy problem. Still, this excellent law is from one point of view incomplete, namely, it penalizes the householder for not carrying out properly his portion of the cooperative arrangement, but it does not penalize the scavenger, the local health officer, or the town for not carrying out their part of the contract. I have personally seen privies even in North Carolina which had been built in good faith by the people, and at considerable expense, but which were in an outrageous condition due to poor scavenging, poor local inspection, and poor health-office administration.

The point I want to emphasize is that proper administration is a sine qua non in proper privy sanitation and that the administrative authorities are not held sufficiently to account for lack of efficiency in their part of the contract.

To suggest a practical remedy for this evil is more difficult than to define the fault; still the effort should be made. The remedy I would suggest may perhaps be considered slightly radical, but if you have a working suggestion that is less objectionable, I hope you will bring it forward. I would apply to the city or town which is derelict in its duty in sanitation the same principle that is applied to the individual, namely, publicity by the State board of health. Why should the owner of property be publicly published to his neighbors and fined if his children do not use the privy properly, when the town authorities are permitted, without a supervising public rebuke, to pollute the highways? The public health principle involved in the nuisance is the same, and the only essential difference is that the citizen has to pay out money in order to accomplish his side of the cooperation, while the city and its employees are paid for their part of the cooperative work.

We constantly harp on the necessity of educating the public in sanitary matters, and we even have recourse to the courts in order to enforce compulsory education along these lines. My suggestion is that more State boards of health inspect local boards of health and apply the same education and publicity to these which the local health officers apply to the citizens. Why should State boards publish comparative morbidity and mortality statistics but remain quiet upon the comparative status of the causes which underlie these figures?

Disposal of excreta.—In some of the privy campaigns, the important point that the privy is only a temporary storage place for excreta has not been sufficiently emphasized, and it has seemingly been assumed that this represents its final resting place also. Strange as the proposition may appear, privies have actually been installed without any definite plans as to future necessary scavenging and disposal. This is a distinct shortsightedness in administration in connection with a basic necessity of sanitation and the fault lies clearly at the door of local health organizations. What good does it do to arouse enthusiasm among the public to install privies if the people are to become disgusted with them later because there is no arrangement to clean them?

We must frankly admit that the cleaning and disposal problems are complex, but that is no valid excuse for avoiding the subject until it becomes critical.

The disposal of excreta involves administrative and technical problems in finance, labor, water pollution, soil pollution, bacteria, protozoa, and insects (especially flies). No one method is conceivable which can possibly cover all of these points for all localities. The disposal problem, like the question of privy types, is so inti-

mately bound up with local questions that it requires a practical exercise of judgment in order to determine what should be done, and unless certain local governments exhibit more interest in their local disposal problem, privy sanitation will remain insanitation. As an example, the health officers of two cities in a certain State have recently informed me that they did not know what was being done with the night soil.

The chemical disinfection of excreta in bulk, after it is collected, is a laboratory possibility, but it is too expensive for practical use. Last year I reported most encouraging results in bulk disinfection with as low as three-quarters of 1 per cent caustic soda; subsequent studies on other samples of excreta fail to give uniformly satisfactory results with this low percentage. In summer work on certain samples in bulk we had excellent results with sodium dichromate, but winter work with other types of night-soil was less favorable. Present knowledge of the subject and present prices of chemicals and labor do not combine to give a satisfactory method of chemical disinfection of large quantities of excreta and this plan can at present best be tabled as a financial impracticable proposition until there is a fall in prices or until the happy finding of some very cheap satisfactory chemical. This does not mean that the chemical privy is of necessity impracticable. On the contrary this type has its distinct uses among people who will take proper care of it.

The drying of excreta by a rotary drier is entirely possible from a laboratory point of view, but this method also is economically impracticable as a working proposition under present conditions, since the purchase, installation, and working of the apparatus involve problems in finance, fuel, power, and labor that are beyond the funds available for this purpose in the average town.

Experiments in disinfecting with waste steam were planned but not undertaken. The problem of ordor by this method is an important one. We hope to try out this method next year.

The incineration of excreta seems at present to have a very limited field of practical application. There is some promise in this method when local conditions are favorable so that waste fuel can be utilized.

Thus, given present conditions of finance and labor, when the question of "How much will it cost?" is of necessity the great final standard by which methods must be judged, we are forced to the conclusion that the disposal into sewers or into septic tanks, and burial by one technique or another are the methods which come into practical consideration.

In studying the question of burial of excreta we are forced to consider the problems of expense, of labor, of pollution, and of flies. The expense, labor, and pollution problems have led the board to consider the possibility of eliminating the trench and of utilizing the bacterial action of the top soil by dumping the excreta on the surface and covering it with sawdust. This method seems to have certain advantages and certain disadvantages, and it is limited to the practical availability of sawdust.

As shown by the photographs (figs. 1 to 5), a rim of sawdust can easily be made inside a movable frame work and a layer of 1 to 6 inches is placed on the ground. The scavenge wagon dumps into this sawdust box and the fresh night soil is easily covered with a layer of 4 to 6 inches of sawdust. The odor is almost negligible, for after the excreta are covered, the odor is not detected 6 feet a way.

Experimentally, if water is poured into a jute bag which has been filled with sawdust, some of the fluid is retained, but much of it runs through and drips out at the bottom within a few minutes. The same process obtains in our sawdust boxes, namely, some of the fluid is retained by the sawdust, but much of it sinks promptly to the top soil layer and thus comes into contact with the soil bacteria, and this gives a sanitary advantage over the burial of excreta in a trench, for by this sawdust method the ground water has the added protection of the top soil. The rapidity with which the fluids and the contained bacteria reach the ground water will of course depend upon several factors, namely, the amount of original fluid, the amount of rainfall, the permeability

FIG. 1.—FRAMEWORK FOR SAWDUST-COMPOST DISPOSAL.

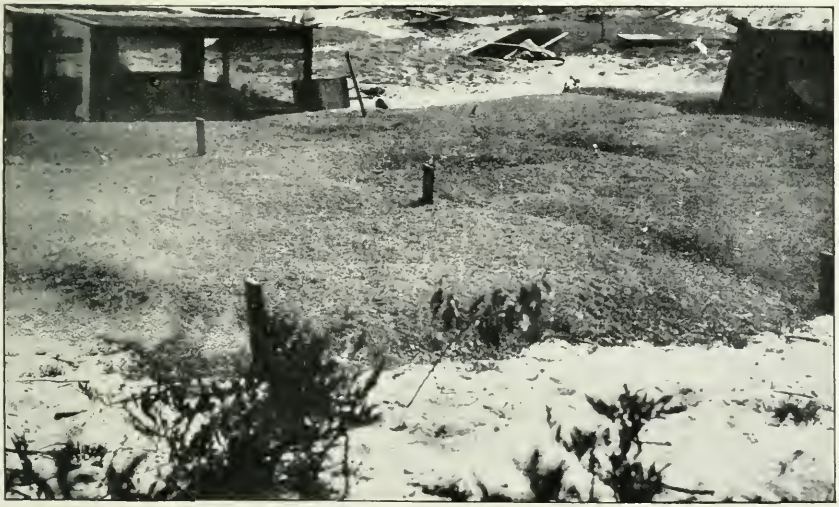

FIG. 2.—SAWDUST-COMPOST PILES.

Each square represents about one cubic yard of can material. Notice the birds catching the flies which issue; frequently 20 to 100 birds are found on the piles.

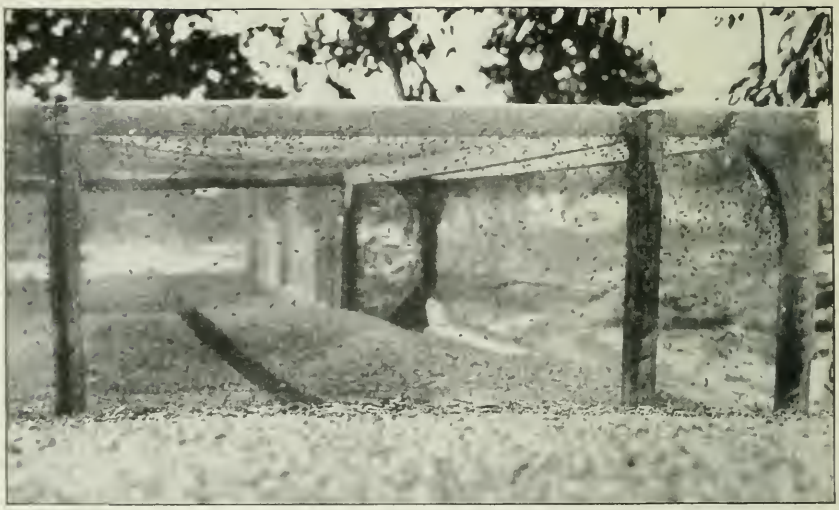

FIG. 3.—TWO SAWDUST-COMPOST PILES, SCREENED TO DEMONSTRATE THE NUMEROUS FLIES WHICH ISSUE FROM NIGHT-SOIL COLLECTIONS.

FIG. 4.—A SAWDUST-COMPOST PILE, SHOWING GROWTH OF GRASS. THIS GRASS "BURNS OUT" AFTER A FEW WEEKS.

FIG. 5.—THE ORIGINAL EXPERIMENTAL BARREL SAWDUST PRIVY AT THE MARINE HOSPITAL RESERVATION, WILMINGTON, N. C.

It is located on a slope at the end of a platform which may be taken to illustrate the possibility of locating a privy on a porch or "gallery." The old superstructure is the privy-house of the original out-of-door L. R. S. experimental privy; the first experimental L. R. S. was an indoor unit.

of the soil, the level of the ground water below the surface, and the great factor of time. Our experiments have not yet extended over sufficient time to permit consideration of all of these sides of the problem, but it is obvious that surface sawdust-composting is safer than trench burial.

The odor from the sawdust-compost piles is sufficient to attract flies for a few days, and if the sawdust layer does not cover the excreta completely the insects oviposit, the fly larvæ burrow into the excreta, feed, and pupate. Naturally the excretal mass is fly-blown at the time it is collected, and the eggs and the larvæ continue their development (fig. 3). Accordingly, the fly problem is not eliminated, and up to date no economically practical method has been developed to destroy this fly infection. Birds, especially sparrows, are promptly attracted to the piles and devour thousands of flies as they issue and before their wings are sufficiently hardened to permit them to escape. Numerous flies can be captured in traps. But the fact remains that sawdust compost only partially solves the fly problem, which, however, does not seem any greater in this method than in trenching.

In connection with the bird cooperation in the disposal of excreta, a very practical point develops. The field selected for burial is very frequently one which is devoid of trees and bushes. It is, however, a well-known fact that birds are attracted more to wooded than to nonwooded fields and on this account I would suggest the advisability of selecting, whenever feasible, a field provided with or surrounded by trees and bushes. We have found that our trees and shrubs (fig. 1) at the Marine Hospital, in Wilmington, are of distinctly practical value from a standpoint of bird cooperation, for if the birds, while feeding on the flies, are disturbed by cats, dogs, or other factors, the trees and bushes give them near-by refuge and protection, and they return promptly to the sawdust piles when the danger is passed. If they had to fly a long distance, their return would doubtless be less prompt.

Hookworm eggs develop in sawdust if sufficient moisture is present, but this side of the problem does not worry me, for as the piles become dry from action of the wind and sun, many of the young hookworms will be killed by drying; others will sink into the soil and if left undisturbed a sufficient length of time will certainly die of starvation.

Thus, composting with sawdust seems to present an additional method of night-soil disposal which will be applicable in some localities. It saves the cost of digging trenches; it gives a somewhat better protection against pollution of the ground water; it is not offensive from the standpoint of odor; theoretically, at least, it utilizes the manurial value of the excreta to a considerable degree; it does not completely solve the fly problem (but what method does or can?); and its practical application depends upon the immediate availability of sawdust without prohibitive expense for hauling, hence the method is to be considered only as applied to sawdust localities.

Types of privies.—The longer I study the privy problems, the less relative importance I am able to attach to the question of the various types, as a fundamental problem, and the more persuaded I am that there is and can be no type which can be accepted as the "universal privy." The type to be selected is dependent upon local conditions of finance, mentality, soil, and labor, with the thought that we can not actually recommend a privy which involves a compromise with our conscience and responsibility. For instance, the chemical privy has its distinct uses, but from practical considerations I would certainly not recommend it for installation in a "buffer" cotton-mill village. The LRS system is excellent, but I would not recommend it if the drain pipe is to be laid directly in soil instead of in a bed of cinders or other proper material. The can system has its proper use, but it must be predicated upon a proper scavenging system. The pit has its proper field, but this is not in limestone or high ground-water regions. The only type which I am willing to condemn as almost totally vicious is the "surface privy open in back" ("type E"), and it is to this atavistic type that all other types

sooner or later revert unless there is proper privy administration; still, even this "type E," so called, can be improved and used to advantage under certain exceptional conditions.

In acknowledging the premise that the type to be selected is a local, and often even an individual problem, I invite your attention to what appears to be a new type which we have recently developed and which has been satisfactory to date in actual use during the experimental study. This is not presented as a "universal privy," for it is of necessity restricted to local conditions; but in certain areas it will seemingly be an improvement over the pit, the can, and the vault, and it is so economical is construction and upkeep that it should be adopted by certain families more readily than is either the LRS or the chemical system. You notice that I said it *appears* to be a new type. It is in fact new to the board, but we can hardly guarantee that anything is absolutely new in privy building. As a descriptive name, I suggest the barrel-sawdust privy.

A barrel-sawdust privy.—Variations in styles and construction of privies are nearly as numerous as the articles upon these outhouses. To a person who seeks a "universal privy," no excuse exists for multiplying either styles or details of construction. But to the person who recognizes the point that the idea of a "universal privy" is only a bubble, a multiplicity of variations in styles, types, and details, is a desideratum.

Every simplification in construction and every suggestion for the utilization of materials already on hand are to be encouraged, since the ultimate object is the safe (or the safe-as-feasible) disposal of excreta.

Among the conditions under which sanitation is poorest may be mentioned farms, sawmills, construction camps, and chain-gang camps. The privy suggested in the present report is especially adapted to sawmills and to construction or to chain-gang camps in the vicinity of sawmills. Its use on farms, as a substitute for the pit privy, is dependent upon the size of the family and the availability of sawdust barrels, and hogsheads.

Construction.—Place a water-tight hogshead (figs. 5 and 6) (as a molasses hogshead) on skids; knock out the head, but preserve the bottom; nail four braces on the outside of a water-tight barrel (as a turpentine barrel), about 17 inches from the top; knock out both head and bottom; set the barrel into the hogshead, resting it on the braces; fill the hogshead with sawdust up to the lower end of the barrel (or a little above this line); place sawdust in the entire space between the top portion of the hogshead and the outside of the lower portion of the barrel (to keep out flies); use the barrel as the "riser" for the seat, and place on top of the barrel a seat with falling lid. The privy is now fly-tight in construction. It can be located at the end of a platform, such as a porch, or inside an outbuilding, and its location determines whether or not steps must be built to permit its use.

Use.—There is more or less separation automatically of the fluids and solids, since the urine sinks promptly into the sawdust while the solids accumulate on top.

Cleaning.—When the fluids and solids accumulate to an extent that calls for emptying, the barrel is lifted out; the fluids and solids are now left in the hogshead, but some scraping is, of course, necessary to clean the solids from the inside of the barrel; cover the excreta with the surplus sawdust between the barrel and the hogshead; hitch a mule or a horse to the skid, draw the hogshead away to a distance of say 200 to 1,000 feet away from the original location, turn it over, thus dumping the contents on the top of the ground (fig. 7) and, if necessary, cover the pile with about three inches of sawdust. Our observation is that additional sawdust will not always be necessary, though it is advisable. If the contents have been fly-blown, because of failure to close the lid, the flies will, of course, develop and escape through the sawdust cover, but this latter will prevent or at least vastly decrease new fly breeding and the odor from the sawdust pile is nil or practically nil. This pile should be left undisturbed for a

FIG. 7.—THREE SAWDUST PILES RESULTING FROM OVERTURNING AND EMPTYING A BARREL SAWDUST PRIVY, CLOSE TO THE ISOLATION WARD OF THE U. S. MARINE HOSPITAL, WILMINGTON, N. C.

The excreta are on the ground and are covered with the original sawdust. Not the slightest odor from the excreta could be detected two feet away, and no fly nuisance resulted.

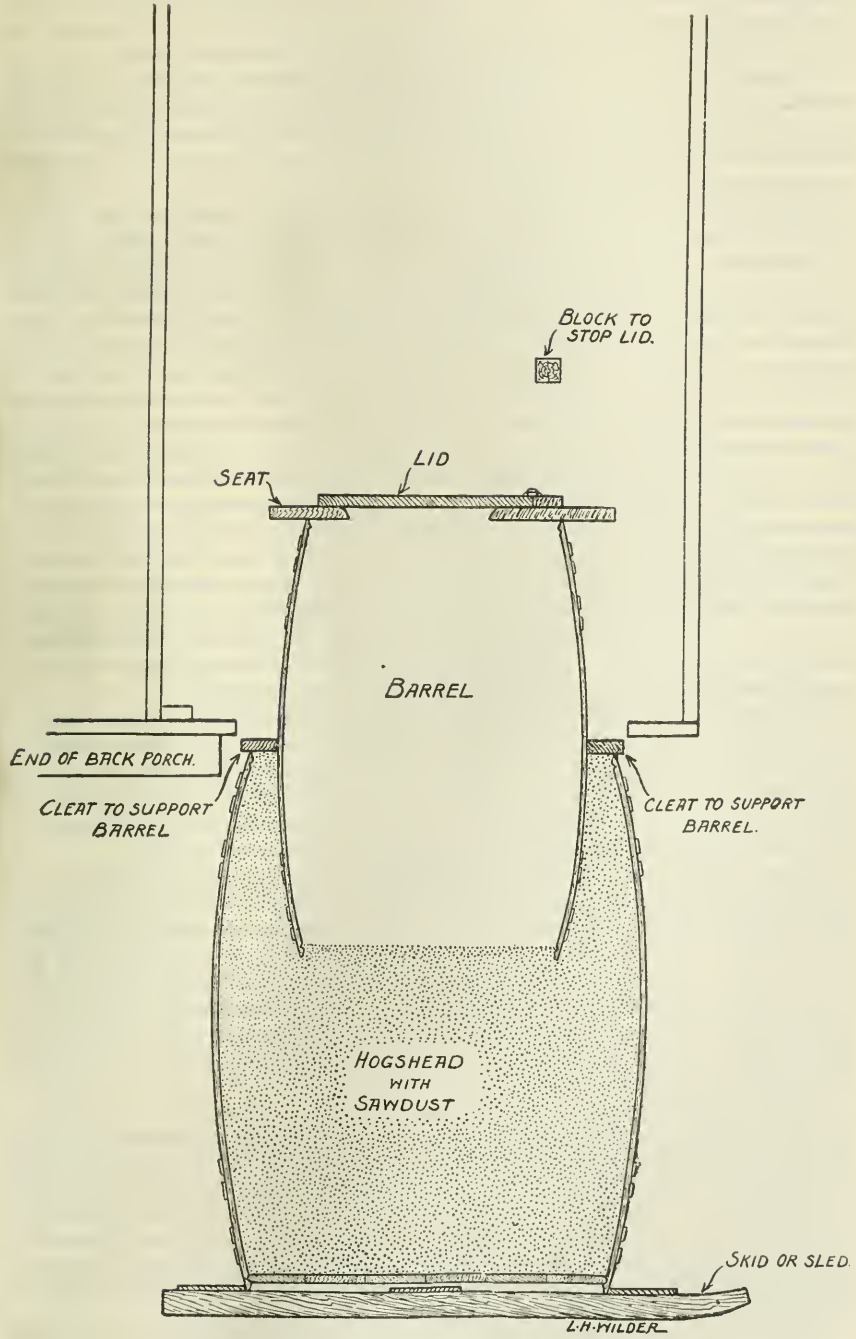

FIG. 6.—Diagram of construction of a barrel-sawdust-privy. Note the simplicity of the fly-proof construction.

(at present undetermined) number of months, but theoretically it can be left undisturbed for at least one, preferably two years. The hogshead is returned to place, the barrel is readjusted, new sawdust put in, and the privy is again ready for use.

Capacity.—A privy of this kind has been in experimental use at the Marine Hospital at Wilmington, from April 3 to May 22, 1920. There have been 100 defecations and 95 additional urinations during the 50 days in question; this gives an average of 2 defecations and 1.9 extra urinations per day. Not more than 10 per cent of the capacity of the privy was exhausted on May 22.

Estimating the excretions of a family of five persons as two quarts[1] per day, a privy of this type would require emptying approximately once every three months.

Advantages.—Among the advantages of this kind of a privy and method of disposal may be mentioned: Ease of construction; ease of fly-proofing; the ground water under the privy is protected from contamination far better than in case of either the pit or the surface privy, and equally with the bucket and water-tight vault; decrease in frequency of cleaning, as compared with the pail system; ease and cleanliness of cleaning as compared with the pail, the pit, and the vault; when the contents are dumped on the surface of the ground, the fluids sink to the ground, and the sawdust holds well against the rain; the surface of the sawdust dries by sun and by air drying, thus forming an unfavorable surface for hookworms; the fecal bacteria naturally wash down into the topmost layer of the soil and are thus farther away from the ground water than they are in a pit privy or if buried; the fresh sawdust layer on top is a good protection against flies, provided it is thick enough not to lamp wick the excreta to the top (in which case it is favorable to flies); the odor of the privy is not more than the odor from the other privies; the odor from the final disposal plant is nil or practically nil; the excreta are preserved to the ground as fertilizer; the construction, maintenance, and disposal are all about as "fool proof" as can be demanded or imagined; repairs are easy to make; materials on hand can be utilized.

Limitations.—This type of privy is limited to the availability of sawdust, barrels, and hogsheads. It is rather difficult to construct water-tight boxes, but if available, these might be substituted for hogsheads. If the hogshead leaks, the fluids seep through and attract flies, but this fault can be met by banking sawdust around the base. The units (one hogshead, one barrel) must be duplicated or cleaning must be done more frequently as the number of persons using the privy increases.

It has occurred to us that this general principle of prompt separation of the urine from the feces might be accomplished by use of pine needles, excelsior, chips, tan bark, chopped straw, leaves, sand, stones, and other similar materials in case sawdust is not available, but we have not tried these substances. Theoretically, sand and stones increase the labor of cleaning, and we would expect the materials, other than sand, to give more of a fly problem than does the sawdust, because the voids would be larger; in fact, in trying leaves and dried grass as a cover for pits we noticed that the larger voids gave us a condition distinctly more favorable for flies than has thus far been experienced with sawdust.

Type E: I stated that the "Surface open in back" or "Type E" privy could be improved. The improvement is not, however, sufficient to permit its recommendation, but only enough to permit its toleration in case we can do no better. You are all aware that some families use the "Type E" and cover the excreta more or less with ashes or dirt. Here again sawdust presents a new alternative. Its advantage in this case is that it is not so heavy to carry as are ashes or dirt. But none of these substances is satisfactory, for the reason that the excreta are not thoroughly covered, hence the fly problem remains, although the excreta when mixed with ashes, dirt, or sawdust are less disagreeable to scavenge than the unmixed excreta.

Sawdust and the pail system.—We are experimenting at present with sawdust in pails and large cans. Our observations have not yet reached a stage which justifies final

[1] Based on measurements of a considerable number of can privies.

conclusions, but certain facts may be safely stated. Sawdust in the pails decreases or eliminates the splashing and it is in so far an advantage. If the can is large enough, as an ash can, the frequency of scavenging is reduced, but the fly problem may be correspondingly increased under certain circumstances. The scavenging is less disagreeable, and the splashing in the scavenger's wagon as it goes along the street is reduced or eliminated. There is also some slight reduction in odor; but labor is increased because of the hauling of sawdust both to and from the privy. Whether or not the use of sawdust in cans is an improvement is therefore sub judice at present.

The privy as a flytrap.—Various persons have suggested the possibility of turning a liability into an asset by making use of the privy as a flytrap. Stiles & Miller (1911) captured 293 flies in 24 hours in a flytrap placed in a surface privy, and 1,742 flies in the same time in a similar flytrap placed in the dining room of the house to which the privy belonged. This demonstration does not appear to have been followed by a practical application of the opportunity suggested. Durrett (1918) has constructed a flytrap lid to privy seats, but the jarring of the lid, as it falls, seems to have limited the life of the trap.

In privy construction many health officers have insisted that the flue be screened to make it fly tight, although other health officers do not consider this at all necessary, since they do not believe that flies enter a privy through the flue.

I have long had in mind a plan to turn the privy flue into a flytrap, and the test has recently been made. A flytrap (figs. 8 and 9) is easily made out of ordinary screening, bent to fit the flue, into which it is inserted. This device serves to catch the flies entering or leaving the privy by way of the flue, does away with the necessity of extra flue screening, and is better than a screen, since the latter simply obstructs the passage of the flies while the trap catches them.

By placing a partition (figs. 8 and 9) in the equator of the trap we were able to keep record of the relative frequency of flies entering the privy and escaping therefrom by way of the flue. The records clearly show that flies do enter privies by way of the flues, that it is chiefly the female flies that enter, that several species (including the common house fly, *Musca domestica*) are involved, and in our observations thus far no fly has entered the traps in trying to effect an exit from the privy.[2] Of 346 flies captured in certain tests, 8 individuals (or 2.3 per cent) were males, and 338 specimens (or 97.7 per cent) were females. All of these went down the flue, but not one came up through the ventilator. The insects were doubtless attracted by the slight odor and from the fact that 97.7 per cent were females, the thought naturally suggests itself that the insects were seeking an opportunity to oviposit. Under this interpretation, the use of flytraps instead of screens in the flues would seem to be of value in reducing the amount of fly breeding in a village.

Some experiments in underground pollution.—One of the important problems in soil pollution involves the question as to the distance the pollution will travel underground from a point of deposit, for instance from a surface defecation, a leaking can or vault, or a mass of excreta buried in a trench or hole. The point at issue involves the combined active motility on the part of the germ, and passive spread by underground agencies, such as earthworms, crayfish, insects, and water. Some of the factors involved are exceedingly obscure, and the technique of study has not always been satisfactory. The technique our bacteriologist, Mr. Pfau, is now using seems to be satisfactory, and we are trying to push this side of the subject.

Probably all of us have long had a subconsciousness that the moisture of the soil and the element of time are the two great factors involved, that distance is an important element despite the fact that, other things being equal, it is of necessity secondary to moisture in importance, and that different types of soil present different problems. In fact, some of us have argued publicly along these lines.

[2] Later note: By modifying the flue into a short horizontal pipe and doing away with the "upright," we have caught flies in both halves of the trap.

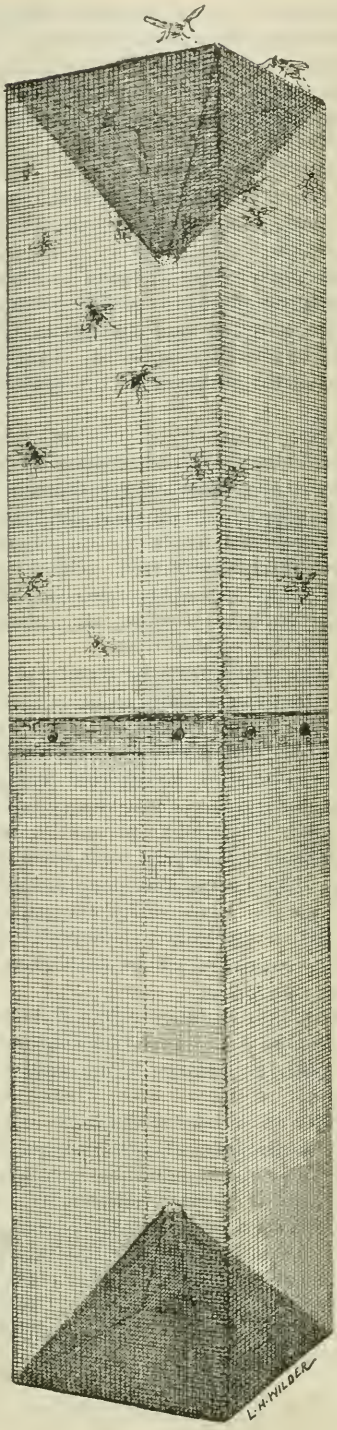

FIG. 8.—An experimental wire fly-trap for use in a privy flue.

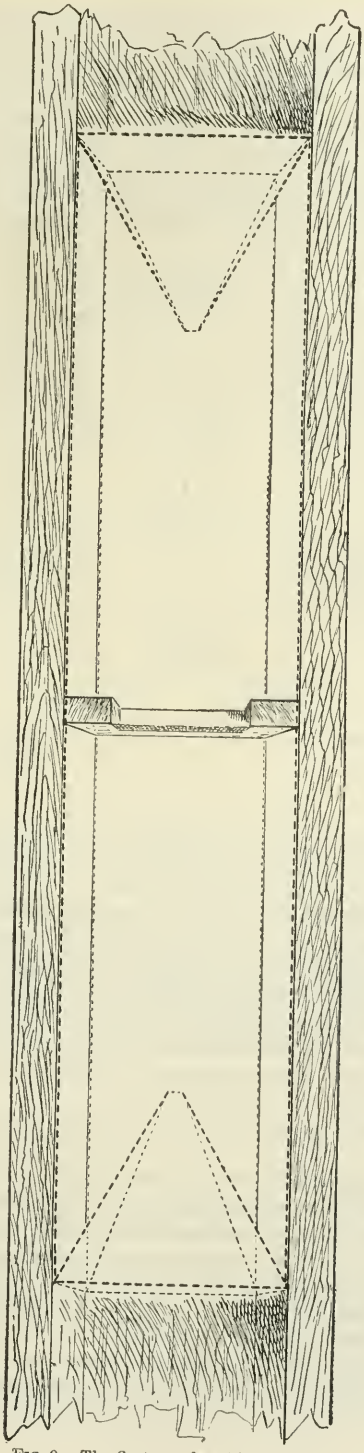

FIG. 9.—The fly-trap placed in the flue.

As fundamental premise, permit me to emphasize the point that dryness is inimicable to hookworm larvæ and typhoid bacilli. Given a thoroughly dry barrier of soil between a cracked concrete vault or a pit privy and a well, and the well is safe from pollution from the privy. As soon as the voids in the soil become sufficiently moist to permit active motility or passive floating of the germs through the voids, the question of danger arises, and time and natural enemies become factors of great importance. These live germs are always potentially dangerous, no matter where they are, but this potentiality is of no importance unless the medium in which they exist has sufficient moisture to permit them to spread. Elemental as this point is, it is

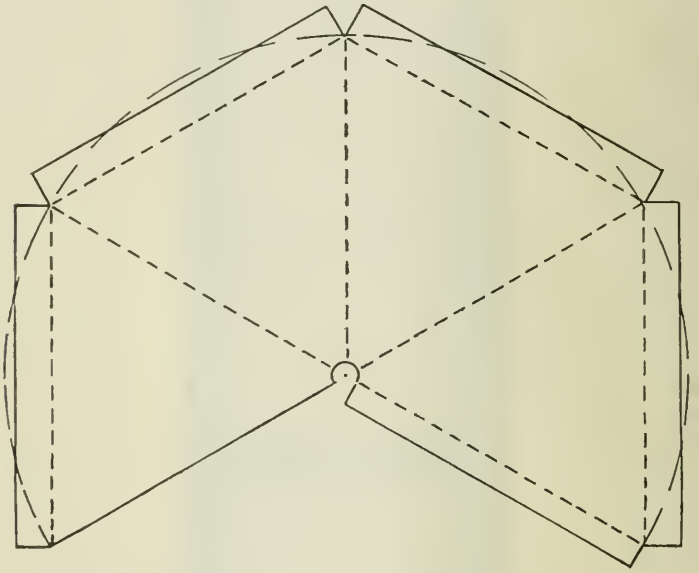

FIG. 10.—Diagram of outline for cone at ends of a flytrap to be inserted into a flue with square cross-section. Cut the wire screen along the solid lines, bend it along the dotted lines.

fundamental and (leaving out of consideration the transportation by various animals such as earthworms, insects, etc.) it will bear emphasis as follows:

1. Moisture and time seem to be the factors of chief importance involved in the actual danger of the spread of potential infection in a privy.

2. Water-tight construction presupposes a surrounding layer (as concrete) of dryness, which, in addition to the minuteness of its voids, prevents the spread of infection.

3. A leaky vault privy is always potentially dangerous, but if surrounded by dry soil it is potentially safe.

4. Certain factors, such as rain or urine, may render this potentially safe leaky privy a dangerous one.

5. A pit privy is, potentially, a privy which leaks on five surfaces, but if the surrounding soil is sufficiently dry and extensive to form a barrier which is inimicable to the spread of the germs, it is practically safe. Its safety is, however, only relative, as in the case of a leaky vault, and time becomes the great factor involved.

Turning now from these theoretical considerations to experimental evidence, it may be stated in brief summary that in experimental work in sandy soil at Wilmington conducted by the board on excreta disposal—

1. It has been found possible to maintain an experimental pit privy for 4 months within 6 to 10 feet of wells without demonstrating bacterical pollution of these wells,

although chemical pollution with salt was washed through within 8 to 15 days. The bottom of the pit in this case is 8 feet above groundwater, and obviously the intervening barrier of sand is still sufficient to protect the groundwater. Time now remains an important element of the variable value of x.[3]

2. It has been found possible to trace perpendicular pollution down to 28 inches in the sand under a mass of excreta placed in experimental pits, but not recharged after once charged with excreta. Thus, without daily urinations, and with the pit covered so as to exclude direct rain, *Bacillus coli* sank 28 inches into the sandy soil.

3. It has been found possible to recover *Bacillus coli* in soil samples down as far as 60 inches (beyond which satisfactory samples could not be taken) below the bottom of an experimental pit within three days after it was charged, when flood conditions were simulated by running water into the pit.

4. It has been found possible to pollute the groundwater radially and to recover *Bacillus coli* up to a distance of 20 to 160 feet by sinking excreta pits into the upper layer of groundwater. Tests beyond 160 feet have not yet been made.

The important point which I desire to emphasize is that the various board of health rules prescribing the relative location of privies to wells and water edge are usually

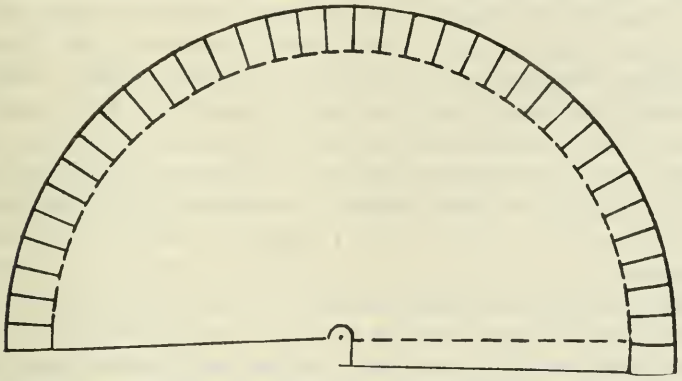

FIG. 11.—Diagram of outline for cone at ends of a flytrap to be inserted into a flue with circular cross-section. Cut the wire screen along the solid lines, bend it along the dotted lines.

expressed in terms of distance only. Other things being equal, distance is of course an exceedingly important factor, but the factor of the moisture content of the voids in the soil is in reality fundamental in considering the location of permissible burial of excreta or installation of privies which are not water-tight.

AFTERNOON SESSION.

The conference reconvened at 2.30 o'clock p. m., Dr. Schereschewsky presiding.

Dr. SCHERESCHEWSKY. The meeting is called to order. I request that all guests of the conference leave their names and addresses with the reporters who are taking the proceedings.

When we adjourned at the noon hour Dr. Stiles had just concluded his interesting report on the work of the board on excreta disposal. I think that some of the results that Dr. Stiles has brought forth in

[3] Later note: "Time" has played its rôle, and wells up to 75 feet distance show pollution. The experiment is being repeated in order to confirm results or to detect some unknown error in the work.

his report are so interesting and give promise of such further advance in solving the problem of proper disposal of excreta in rural sections that his report merits the fullest and freest discussion. I would be very glad to have Dr. Rankin open the discussion on Dr. Stiles's paper.

Dr. RANKIN. I think this paper is one of the most instructive papers we have heard here within the last two or three days. There were three very important points brought out in this paper: First, the new type of closet with its many advantages which Dr. Stiles has described; second, the information which he has brought to us in regard to the distribution of coli in the ground; third, the interesting information in regard to the fly problem, that 97 per cent of the flies visiting the closet go there for breeding purposes.

I hope that the Public Health Service will see its way clear to continue this work and enlarge it when it becomes convenient. Of course, when we are dealing with the privy we are dealing with one of the four great sources of preventable disease. We have the preventable diseases carried by social contact, those carried by respiratory infections, those carried by insects, and the most important from the standpoint of results obtained from the money expended, the fecal-borne diseases. The work of this board is aimed at one of the main sources of disease, particularly for the warmer parts of the country, and I hope the work can be continued and enlarged.

Dr. HURTY. We all recognize that we have listened to a real scientific paper, a paper treating an important subject in a scientific way, and that means a great deal. Order and method and knowledge gained by his experiments were properly arranged and put in order so all could be handled and made practical. We all know that the disposal of human excreta upon the farm is one of the foremost of the rural sanitary problems. If that is not attended to it is of little use perhaps to attend to other problems. You might just as well let them go. We must teach the farmer that he must separate himself from his sewage. Of course, I am speaking of the average farmer. I have found that some farmers have a splendid system of sewage disposal. But many have a horrible abominable outside privy. Then, there is that terrible manure pile with its fly-breeding possibilities.

I have had some interesting experiences in regard to this matter. I talked to one farmer about his horrible outhouse, and asked whether the women of his household were not entitled to better treatment than that. He said "Oh, well, that is good enough for the women folks; we men don't go there, anyway." That is an instance of what you have to deal with. Another man who termed himself practical (he had amassed at least $100,000—that is the way we

determine whether or not a man is practical) bought property in a little town called Waverly. It contained two interior closets, a bathroom, a very excellent water system, and the sewage was carried off to a distance and proper disposal made of it. The first thing he did was to tear out those inside closets. I said, "Why did you do that?" "Oh," he said, "the idea of having closets in a house." I told him that the hotels and all homes in cities are provided with these conveniences. He remarked "Well, just look what sort of people you have got up there, too." I tell these stories to show you what we have to contend with. Let us away with the horrible unsightly outside privy.

Dr. ABERCROMBIE. I unfortunately did not hear Dr. Stiles's paper. I am very much interested in the type of toilet he has. We have 17 health officers in Georgia, full-time health officers; beginning January 1, 1920, we set a quota for them in building sanitary closets, of course, with their consent. This quota was to be 10,000 by the end of the year, and I am satisfied Dr. Stiles's type of closet will help us to reach that quota. There are only two objections I can see. I think they can be overcome. One is the inaccessibility of the sawdust. The other is that in many places the house would have to be raised to accommodate the type of closet. Rather than go up steps the people would not use it. It has so many good features to it, however, that I think we can very well adopt it.

Dr. STILES. In regard to climbing steps to sit on the throne, that is a local question. If the toilet can be put on a hill or piazza, this will not be necessary. If put on the top of a hill the difficulty can be easily met. It is simply one of the many types that is applicable to certain localities. I would emphasize one point more than any other. We must get away from the idea that we can go into any one region and recommend any one type of closet for the entire region. For instance, for many of the people I would not hesitate to recommend a chemical toilet. Intelligent people can use a chemical toilet, but for the poorer rural population I think the money is largely thrown away. They are not up to it and you have got to consider the psychology of the people. In conclusion I would simply like to express the keen appreciation on the part of the board of the absolute freedom the bureau has given us in this work. If there has ever been a time in my 29 years of Government service that the supervising powers that be have made every concession and have allowed me a free hand, this is the time. The bureau has simply cut the red tape to the lowest limit and I would like to express publicly my appreciation of the kindness of the bureau in this respect.

Dr. SCHERESCHEWSKY. The bureau may feel complimented in having exhibited a certain amount of common sense in the matter.

In the absence of the chairman of the conference, we will pass over the first subject on the program. The second matter has already been covered by Dr. Lumsden in the discussion of his paper. Passing now to the question of child hygiene, we have before us for discussion the bill for physical education which is being promoted by the National Physical Education Service. I will ask Dr. Rankin, from whom the suggestion was received, to open the discussion on the subject of the Fess-Capper bill. I will ask Dr. Rankin to explain the bill.

FESS-CAPPER BILL FOR PHYSICAL EDUCATION.

Dr. RANKIN. I would rather have some member of the service discuss the Federal administrative phases of this bill and I shall restrict what I have to say to the bill as it relates to State health administration. Most of you have seen the bill, I believe, the first Capper bill; I have forgotten the number. It carries $10,000,000 appropriation which is appropriated to the States on a population basis and which makes provision for physical education. By the term physical education, I include the teaching of hygiene, certain recreational facilities about the schools, and the detection and treatment of physical defects of school children. I shall make no comment as to the relation to the Public Health Service of the administration of this bill, which is placed largely in the Bureau of Education of the Department of the Interior. I hope some member of the Public Health Service will discuss that phase of the bill. Coming now to the administration of the bill as it relates to State machinery, section 13 of the bill, it says that this act shall be administered in the States by the superintendent of public instruction or such other administrative agency as the general assembly of the State may designate.

The term "some other agency to be designated by the general assembly" is an amendment put in after conferences of the proponents of this measure with a number of State health officers. As the bill originally stood it placed the administration of the act within the States entirely under the department of education. As the bill stands to-day it suggests to the States that the act be administered by the department of education, but gives the State a little leeway and leaves it open for the general assembly to designate some other agency if it should wish to do so. Section 13 ought to read like this: "The agency to administer the act within the States shall be designated by the general assembly of the States," leaving the thing wide open to the States—a recognition of the vital principle of State sovereignty. You understand, I am only discussing this bill as it relates to State health administration. If a State wants to put that act under its department of education, let the State do it. If a State wants to put that act under the board of health, let the State do it. If it wishes to put the act under a joint committee representing both

agencies, the State board of health and the department of education, let the State do it. But the States are getting tired of Washington's legislating for them, passing acts and naming the machinery for the States. That is the feature of this Fess-Capper bill to which I imagine all the State health officers object. If section 13 is amended so as to recognize in full the right of the State to designate its own machinery the bill will be thoroughly acceptable to the State boards of health.

I am just going to say this much on the Federal administration of the bill from the Federal standpoint. We would not have the trouble referred to in the States if the situation here in Washington was right. It is because we have five cabinet departments all trying to do health work. There is a tendency on the part of the Federal administration to carry this division in health work down into the States. Each one of those departments wants to create a subdivision or a State agency through which it can operate instead of through a single agency—the State board of health. The bill introduced under the Department of Labor—the Children's Bureau—attempts to do the same thing. That bureau attempts to designate the machinery in North Carolina which is to do the work in which it is especially interested—to create another State board of health. The reason for these bills being introduced here is because we have multiple agencies where we should have a single agency. If we would prevent the danger of a divided State health administration we must start here in Washington. We must have a coordinative Federal health administration, not a Federal health administration divided up between 10 departments and about 30 bureaus overlapping and duplicating. The trouble all arises here and the whole thing comes back to the fact that there are separate agencies here that want to extend themselves down into the State and perhaps into the counties. The cure for the whole trouble lies in Washington, not at the State capital and the cure is to get an enlarged and coordinated Federal health administration. I think the principle of the Fess-Capper bill is splendid. The only question is one of administration. We ought to have just what that bill provides, but we ought to have the administrative machinery, so provided that in North Carolina the department of education and the State board of health will be in absolute harmony and not in conflict.

Dr. SCHERECHEWSKY. In order that we may get this matter fully before the conference, before we proceed I will ask Dr. Clark to mention the Federal features of the bill, and I may also add that while the public hearings on this bill have been concluded, the committee is by no means ready to report but has stated that it will accept statements and memorials from bodies interested in this matter and con-

sider them in the hearings. At the hearing which took place recently there were no State health officers present to give their opinion on the administrative features of the bill, and I believe that if this body comes to some conclusion as to what their feelings are on the administrative features of the bill they would do very well to embody them in some resolution or other to be transmitted to the committee on labor and education in the Senate. I know those gentlemen are not prejudiced in favor of any form of administration and are ready to amend the bill if it seems that the best judgment requires its amendment.

Dr. CLARK. I think it would be well to explain to the gentlemen present how this bill came to be drawn. It was not drawn by the Public Health Service. In February, 1918, a conference was called by the Commissioner of Education to meet in Atlantic City, which was attended by representatives of a number of volunteer agencies engaged in health and welfare work throughout the country. As a result of this conference, a national physical education committee was appointed, and this was further divided at a subsequent meeting into a number of secondary committees, one of which was the committee on legislation which drafted this bill. In its present state the bill represents the maximum concessions which I myself, a member of the committee, was able to obtain from the educational authorities. The bill provides for several things, but essentially and primarily it provides for physical training in the schools of the country, and secondarily for medical inspection prior to the assignment of children to classes in physical training. It also provides for the training and employment of physical educators, including medical inspectors.

We must all recognize that the educational authorities have a certain right in the premises, that the child is compulsorily under their supervision, and that the child's physical condition has a marked bearing on his ability to take advantage of his educational opportunities. However, we must also recognize the fact that for a still longer period of time the health of the child is a problem of the health authorities of the country, hence the conflicting claims of the health and educational authorities as to which of them should exercise supervision of the health of the school children. In fact, both of them have a certain right in the premises, the one from the standpoint of restraint and control, the other from that of instruction.

If we are to profit by the experience of other countries which are pioneers in school hygiene work, particularly England, legislative bodies would put the administration of all health work in the schools in the hands of the health authorities.

Dr. Rankin has very emphatically brought out the point that there is great duplication of effort in Government bureaus. A rough

estimate gives 33 different bureaus directly engaged in health work, and 37 indirectly. Any Government bureau, if it can get some one to introduce a bill, is at liberty to seek authority to extend its activities in all sorts of directions, irrespective of duplication.

Sections 9 and 10 of the Fess-Capper bill, providing for a division of child hygiene in the Bureau of the Public Health, have been objected to by one or two nongovernmental agencies on the ground that the establishment of such a division would cause the Public Health Service to duplicate the work of other Government bureaus. The service has long been engaged in studies of health problems relating to the child, has ample authority under existing statutes for such work, and desires the establishment of such a division for administrative purposes only. The bill grants no additional authority to the service to engage in health work.

I understand hearings on this bill will continue for a longer period. If this conference sees fit to pass resolutions regarding its health administrative features, I am quite sure they will be incorporated in the hearings of the committee.

Dr. McCormack. As long as Dr. Nicolls is not present and Dr. Hayne is not going to discuss this matter I should like to make a few remarks. I really believe this is the most important proposition next to the matter of Federal health administration, with which it is closely interwoven that is going to come before this conference or before Congress. The fundamental thing, the biggest thing in public health and in education in this country to-day, is physical education. Our educational system in the Federal Government needs revision quite as badly as our health administration needs revision. I want to say in admitting the criticism, which is perfectly just, that we are not the only ones at whom stones can be thrown without the perfectly obvious result of broken glass. I was particularly interested last week in the deliberations of that congress in which nearly everybody present took part. The result was 38 closely typewritten pages in the final session, which they hadn't had time to read. It was directed that the 38 pages should be adopted and transmitted to Congress as a Government bulletin. Nobody had ever read any of them except the man who wrote them. As long as education is going to be conducted like that, I am perfectly confident we don't want to submit the health problems with which we are acquainted at first hand to administration by such methods. Aside from that, it seems to me that in that law and every law affecting physical education, this fundamental statement should be made: In so far as it is educational and we should attempt in this law not mere training of the mind, that should be solely in the hands of the school authorities; but in so far as it is a health function, the

relief of physical defects, and the control of communicable diseases, it should be solely in the hands of the health authorities.

But, in each instance, the administration should be done in cooperation with the proper authorities. It is absurd and ridiculous to assume that the Federal Government has failed for 135 or more years of its existence to appreciate the importance of coordinating its functions. I don't believe any other department of the Government ought to have any health functions. Our Congressmen are hearing a great deal about the demand for education. The people are hungry for that sort of thing. And yet we have been feeding them. Suppose this audience had been able when they went through school to have learned everything in every book that was offered to them as mental food in primary school and in the high school. If you had learned all that stuff you would have been ruined as useful citizens unless you were going to be teachers. It should be taken into consideration at the same time that some 80 per cent of the people that are started into this education mill are not going to pass the sixth grade of school. It seems to me that it is of the utmost importance that this organization of health officers shall go on record as distinctly insisting that physical education shall be the education that makes men understand the nobility of labor and makes them physically able to labor; that will train them away from the idea of converting themselves out of work but will enable them to have physical ability and the mental desire to work.

If we don't get back to that basic principle, we shall get nowhere as far as the future welfare of our country is concerned. We are confronted with a thousand plans for universal military training and every sort of thing that keeps people away from producing enough food to feed people. I believe in universal physical training and I believe it should be done during the school period and individuals should not be taken away from productive labor to make soldiers of them. I believe you can make soldiers out of any able-bodied man with normal physique and normal brain; he can defend himself and can attack if necessary. Until we have 95 per cent of that sort of man (instead of having 33⅓ per cent unfit, as now) we haven't got anywhere with our program. I believe the executive committee of the conference of State health officers should arrange to be represented before this committee of Congress and that there should be written into the bill the principle that so far as it is physical education it shall be administered by the educational authorities, and in so far as it is a health administration, it should be administered by the health authorities, and that in each case every agency shall cooperate.

Dr. CLARK. I arise for a correction. I would not say they were right in doing this, yet if I were a member of one of these bureaus I would probably act in the same manner. From the standpoint of

military training, the very excellent physical training provisions of this bill are in strong contrast with universal military training. Military training gets the child too late to prevent many physical defects, improper posture and its results. Military training takes cognizance of the male population only, whereas physical training in the schools is applied equally to boys and girls and from that standpoint it is a very much more excellent provision of a general law.

Dr. RANKIN. I should like to introduce the following resolution which meets the suggestions made by Dr. Clark and Dr. McCormack. You understand now that this motion has a second.

Resolved, That it is the sense of the eighteenth annual conference of the State and Territorial health authorities with the United States Public Health Service that the objects of the Fess-Capper bill for physical education be strongly indorsed; and be it further

Resolved, That it is the sense of this conference that the Federal administration of the said bill as it relates to the sanitation of school buildings and grounds and the detection and treatment of physical defects and diseases of school children should be under the direction of the United States Public Health Service; and be it further

Resolved, That section 13 of the said bill should be amended so as to leave to the legislative bodies of the States the designation of the State machinery through which the provisions of the bill shall be carried into effect within the States, and that subsequent sections of the said bill be amended to accord with the change in section 13; and be it further

Resolved, That this resolution be laid before the Committee on Education and Labor of the Senate and Committee on Labor in the House by a special committee representing this conference.

Dr. RANKIN. Dr. Clark suggested the addition of the word "mental" to the word "physical"—"physical and mental" defects.

Dr. LUMSDEN. The fate of so many resolutions is to lie in a pigeonhole. It should be communicated either by a special committee or by an assisting committee.

Dr. SCHERESCHEWSKY. All resolutions which are introduced should be referred to the resolutions committee to be reported to-morrow for the final action of the conference, at which time, of course, any amendment to the resolution will be in order on the floor.

Dr. LUMSDEN. I suggest, then, that Dr. Rankin introduce a resolution providing that a special committee convey the resolution to the chairman of the committee of the House and to the chairman of the committee of the Senate.

Dr. CAREY. I am wondering if there would be some phrase in that amendment to the effect that this should be continued on State law. In Massachusetts the inspection of public buildings is under the department of the State police. Under statute, certain functions were taken away from the State department of health. I am not quite certain that phrase was in that resolution.

Dr. SCHERESCHEWSKY. States which select their own method of administration of the law should dictate the machinery by which a

law shall be put into execution. It is out of order for this conference to attempt to do the same thing.

Dr. CAREY. I believe inspection of buildings should be under the Public Health Service.

Dr. CLARK. I will reply to Mr. Carey that the statute leaves it to the legislature, so it automatically takes care of that phase which you mention. The legislature has the privilege and the power to do that.

Dr. SCHERESCHEWSKY. My attention has been called to the fact that many of the sanitary engineers attending this conference are under compulsion of catching an early train and for that reason, without objection, the program will be slightly changed, so that the subject "Coordination of effort and promotion of efficiency in field of sanitary engineering" will be considered next.

Dr. DRAKE. As a member of the committee on resolutions, may I suggest that all resolutions be submitted in writing at the earliest possible moment, so that the committee may have time to consider them?

COORDINATION OF EFFORT AND PROMOTION OF EFFICIENCY IN FIELD OF SANITARY ENGINEERING.

Dr. MCLAUGHLIN. In regard to the coordination of effort and promotion of efficiency, I shall be very glad to say a word. I presume this refers to efficiency in sanitary engineering of the State officials and the Federal Government. As you know, the present policy of the Public Health Service in the control of water supplies involves the establishment and development in State health departments of strong divisions of sanitary engineering. We feel that while we are charged with the control of water supplies in interstate traffic and the prevention of the spread of disease in interstate traffic, this can best be accomplished not by building up a large Federal machine, but by utilizing the Federal forces to build up in each State, as nearly perfect as possible, a Department of Sanitary Engineering. This is a tremendous task, much larger than some of us think. Some of us may be deluded with the idea that we have now departments of sanitary engineering in all States. I question whether there are more than 8 or 10 States which have fairly satisfactory divisions of sanitary engineering. I may say there are 11 or 12 States that have no division of any kind of sanitary engineering. There are many States that have an alleged department that is perhaps a one-man department, which is perfectly futile. One man in the sanitary engineering department of the State perhaps without clerical help, without field agents, is apt to be worked to death. However, we must make a beginning. The Public Health Service has been directing its entire energies in sanitary engineering, as far as water is

concerned, to the development of the State divisions, without attempting to enlarge the Federal machine. The two laboratory cars which the service formerly operated have been parked gracefully for use in epidemics.

The service hopes to develop in every State a strong division of this character. It is only necessary to point to the States like Massachusetts, Minnesota, Pennsylvania, New York, New Jersey, where they are strong on the engineering side, to show the results in disease prevention, and that this is an activity that pays; but we find that the best argument is to put in a demonstration in the State as we are now doing in Tennessee, an actual establishment with the training of personnel to carry it on, a demonstration the legislature will most likely understand and respond to. We hoped to have upon this work at least 25 sanitary engineers, but our appropriations were cut to a point where we were only able to have four, and with four men we were able to establish a running division of sanitary engineering in eight States which 18 months ago had no such department. Do not think for a moment that this work is only to be done in States where they have no division of sanitary engineering; there is work of this character to be done in every State in the Union. There is a certain division of that work which is no just charge against that State, i. e., the examination of water supplies used by railroads, and we have been beggars to that extent. We have been expecting the States to carry that burden for us. It is not fair and in such States it would be proper for the Federal Government to detail an engineer to compensate for the amount of work the State does that is put upon them by Federal law and regulations.

I wish to make a suggestion. I am very sorry, indeed, that this matter wasn't presented to the conference of the State health officers in the same clear and lucid manner that Dr. McLaughlin presented his subject, but the arguments were presented yesterday and have been presented for many years before the State health officers' conferences. The head of every division of the Public Health Service has appeared before us with this same swan song. Each one thinks his department is the only department in the Federal Health Service. I presume that the venereal disease men would resent the fact that the State health officers know more than they do about their various branches. I believe that our engineers are as competent as the heads of other bureaus in various departments. I think the sanitary engineer is one of the most important. I have the utmost confidence in our engineers. When they submit propositions to our State board of health, they are submitted with the confident and definite knowledge that they are going to be approved. The conference of State health officers is just a conference of executives, and I am sure that Dr. McLaughlin unin-

tentionally expressed the idea that while State health officers were competent to dabble in all other bureaus, but they ought not dabble with the engineers. I am sure that no engineering division is so secret that the State health executive can not exert his influence among them, and when they do become so, they ought to be created into a State engineering department.

When the State health department attempts to coordinate the work of all of them and to see that that work is properly guided and coordinated, just so soon the State health executive fails to be a State executive. This is a conference of State health authorities and not a conference of other authorities in the State. I believe that from time to time the engineering phase is being emphasized. The conference of State health executives is a conference of State health executives and I do not believe that there is a dissenting opinion among them all that it will ever be anything but a conference of State health authorities. Next to that I want to commend particularly the action of the service in its real constructive effort toward assisting the States in properly emphasizing the engineering work and in properly recognizing the work that has been done. Most of the public water supplies, almost 75 per cent of the school water supplies in this country, are bad. The only relief that will come is through the engineers. There is no question that our disposal of sewage in the large majority of cities, small towns, and farms of this country, is bad, and the solution will come from wise action of our engineers; but it is very important that no solution has so far been presented for the problem of the individual home except by the coordinative work of the health officers with the engineers, and not by the engineers alone. The kind of education that our engineers have leads them to see all the defects, all the dangers, and to guard against all of them, so they devise a plan complicated and expensive and impracticable, in so far as the solution of the real problem is concerned. I don't believe for one moment that the function of any one bureau of the State health department should be emphasized at the expense of any other State bureau.

If serology is important, it is important that we bring our bacteriologists here, if the venereal disease bureau is important, we should bring our directors of venereal diseases here, and in a very short time when child hygiene is established, it will be important to have the directors of our child hygiene work brought here. We will want housing bureaus and other things. I don't believe that we should arrange to have the heads of all the bureaus come to Washington. Our appropriation is not sufficient to defray their traveling expenses and at the same time keep them at work back at home.

SHEPPARD-TOWNER BILL FOR PUBLIC PROTECTION OF MATERNITY AND INFANCY.

Dr. SCHERESCHEWSKY. If there is no further discussion, we will take up the next thing on the program, and if the chair will be permitted I will present this bill to you, the provisions of which most of you are familiar with at this time. It is well known that the Sheppard-Towner bill has for its object the protection of maternity and infancy of the country. I think all health authorities are justly under the impression that we haven't done enough for the children up to the present time. We ought to do ten, twenty, or thirty times as much as we are doing now. For it is a self-evident proposition that when one-fifth of all the deaths are in the first five years of life, it is here that we have the greatest opportunities for the conservation of the health of the community. The protection of maternal and child life presents a problem that has been with us ever since we have been a republic, a problem which we have not yet succeeded in attacking in a comprehensive way. We have only improved conditions, because of the general advance in economic and sanitary conditions. While this bill has the most worthy of all objects which we can do our utmost to promote, it has the same administrative defects as the bill for physical education. We find in the bill provisions for continuing appropriations, beginning with $450,000 in one year up to a maximum of $4,000,000, to be attained five years from the first passage of the bill, to be allotted to States for the purpose of promotion and protection of maternity and infancy, and of course those sums, compared with what it is desired to effect, are very modest appropriations. I think as Federal health officers and State health officers we can, perhaps, find ground for fruitful discussion in the administrative features of this bill. As you are probably aware, this bill proposes to create a Federal Board of Maternity and Infant Hygiene which is constituted as follows: The Secretary of Labor, who shall be chairman; the Chief of the Children's Bureau, who shall be executive officer, and as a very minor and possible concession to the existence of a Federal Public Health Service—which so far as Federal health agencies exist has been recognized by Congress and laws enacted in 1798 as a Federal agency—the last and most subsidiary member is the Surgeon General of the Public Health Service.

As the State agency the bill proposes to create a State board of maternal and infant hygiene. In the original draft of this bill this board was to be appointed by the governor of the State, and consisted of a physician, a nurse, and one member of the State board of health. That, of course, created such instantaneous opposition among the State health officers that the proponents of the bill modified it in a way they thought might suit; so that as this bill now stands, the

board is to consist of not less than three members, who shall have all necessary powers.

It seems that the State board of health may be permitted or directed to administer the State features of this act. Such, then, gentlemen, are the State administrative provisions of this act. Nowhere in this act, except in the position of a minority leader on this Federal board, is the Surgeon General of the Public Health Service or the Federal health agency mentioned. As a member of the Public Health Service, and one who believes that both in the Federal Government and in States, all health functions should be centralized in some central agencies, it seems to me that this bill is vitally defective. It certainly has as its logical conclusion the erection of separate health agencies both in the Federal Government and in States for the several age groups of the population. If we follow out the principle laid down in this bill we should not have in the Federal Government one department of health, but at least six or seven separate departments of health, of which the first would have for its care the expectant mother; the next, with similar departments in the States, the infants; the third, the child of the preschool age; the fourth, the child of school age; the fifth, for young adults; the sixth, for adults; and the seventh, for old people. Such are the general provisions of this bill. To us it seems vitally defective, and we shall be very glad to have this matter freely discussed and the reaction of the State health departments set forth plainly on this matter.

Dr. HURTY. From whom does this bill emanate?

Dr. SCHERESCHEWSKY. From the Children's Bureau.

Dr. CLARK. I should like to call to the attention of this conference that during the hearings on these two bills there developed the fact that the majority of the leading women organizations of the country are greatly misinformed as regards the functions of the health authorities, both Federal and State. I do not believe that these women have been properly enlightened as to the true facts of the case. I furthermore do not believe that when properly enlightened you will find them following any leadership blindly. I believe enough in the common sense of the womanhood of this country to be convinced that they can stand on their own feet and think for themselves. Being a married man I can testify most feelingly on this point. I have attended a number of the hearings on these bills when representation was made to the committee that to vest the Federal administration of their health provisions in the Public Health Service would be to duplicate the work of other bureaus. In fact, at a hearing on the Fess-Capper bill for physical education, the representative of the National League of Women Voters stated that the league indorsed the principle of the bill for physical education at a time when the actual text of this bill was not available;

and since the bill had been formulated and printed it was discovered that the bill provided for the establishment of a division of child hygiene in the Bureau of the Public Health Service, which it was felt should be strongly opposed. However, this sentiment is not universal, because I have at hand the text of a resolution by at least one State league recommending to the National Congress the indorsement of not any specific bill, but the general principle of the establishment of a department of health to administer all the health work of the Government.

Furthermore, there seems to be an insidious propaganda, which may or may not be intentional, that is particularly misleading, regarding functions of the constituted health authorities of the country. Indeed, I have in my hand a confidential communication reporting a public meeting at which a vicious attack was made upon the Public Health Service which was full of misleading misinformation which served as the basis of resolutions which purported to represent the thought of the women of this country. I do not believe this attack received official sanction.

Dr. DOWLING. I move that we instruct the resolutions committee to draw up a resolution regarding the subject under discussion. (Carried.)

Dr. CLARK. This is one time that we are able to appear before you with a statement of something accomplished. And this has been due to the fact that we have had more liberal appropriation of funds for child hygiene activities. In the address by Dr. Farrand, of the American Red Cross, before the conference of State and provincial health officers, I was struck by his statement that there is no longer need for investigations, and his interpretation of that statement. That brought to my mind a statement by Sir George Newman in an article entitled "Public Opinion on Preventive Medicine," to the effect that as the science of government becomes more representative of the aspirations of the people, so it becomes more dependent upon their education and equipment. So far as public health administration is concerned, I feel that this is the crux of the whole situation. He goes on to define education of the public from the standpoint of public health administration as teaching the people to secure and preserve health, to avoid disease, and to assent to sanitary control and sanitary government.

We must create a State-wide sentiment in favor of any public health movement if we are to be successful. We must get the consent and assent of the people at large, and to do this they must be educated in these matters. In my opinion the best way to educate a people in health matters is by conducting State-wide investigations, studies, and demonstrations, the whole people cooperating with the constituted health authorities.

Owing to legal restrictions regarding the expenditure of public funds for child hygiene work, limiting it largely to studies and investigations, we are particularly concerned with the value of work of this character as an educational instrument.

Our child hygiene activities during the present fiscal year have been investigative in character, some of them research, and some informational.

Last December the Surgeon General addressed a questionnaire to the various health officers throughout the country requesting certain information in respect to the child hygiene laws and the child hygiene activities of the various departments of health, including the medical inspection of schools. It will be of interest to you to hear the result of some of our compilations of the answers to these questionnaires, particularly as regards school medical inspection, because of the conflicting claims of State educational and health authorities regarding jurisdiction over health supervision of school children. In 14 States the law provides for cooperation of State boards of health with the State boards of education in school medical inspection; in 6 States the health supervision of school children is exercised by the educational authorities alone; in 9 States by the health authorities; in 21 States the local administration of the school laws is vested in the school authorities and in 2 in the local health authorities; in Connecticut, Florida, Indiana, Massachusetts, North Carolina, Ohio, and Wisconsin the local administration varies with local conditions, and is a joint one. In 4 States the law permits counties and local units to employ public health nurses who can do school nursing, and in 10 States the general laws are indefinite, but are permissive as regards local units.

School medical inspection is mandatory in 17 States, conditionally mandatory in 6 others, permissive in 6, and conditionally permissive in 2.

I think this is interesting, showing as it does the lack of uniformity of method, of definite responsibility, and almost entire absence of appreciation of the immensity of the problem of providing adequate facilities for the detection, correction, and prevention of physical defects among school children.

The research work conducted during the year has been primarily concerned with a study of the usability of dried milk products as a food for infants exclusively on the bottle. This work was begun last August, and is being carried on in Boston, in cooperation with the Boston Baby Hygiene Association and several other agencies. No child over 6 months of age is enrolled, and those enrolled must be exclusively on artificial food. For purposes of study these infants are divided into three groups.

Group 1 fed exclusively on grade "A" market milk, group 2 fed on reconstructed milk made by the mother in the home from whole milk powder containing 3½ per cent butter fat, and group 3, comprising infants fed on reconstructed milk made by the addition and emulsification of butter fat in the required proportion. This latter is made and delivered by one of the leading dairies of the city of Boston. Careful supervision is maintained over all the children, who are weighed periodically. Contrary to expectation, as measured by gain in weight, the children fed on reconstituted milk, mixed by the mother according to formula, did better as a whole than those of any other group.

The first part of this study was devoted primarily to determining the usability of milk powder, and secondarily to accustoming the mothers to the use of this type of food in order that infants in larger numbers might be enrolled for a more scientific investigation. The work has now been extended to include studies of the intestinal flora of the infants of all three groups, laboratory examinations of the various forms of milk employed in feeding both before and after the reconversion, studies of metabolism of a selected number of infants, periodic physical examinations, and a sociologic study of homes from which these children have been recruited.

Through the courtesy of Dr. Milton J. Rosenau the facilities of the Harvard Medical School laboratories have been placed at the disposal of the service, and through Dr. Fritz B. Talbot the laboratories of the Massachusetts General Hospital have been utilized for studies in metabolism.

These studies after being carefully checked up will be presented as the last word in the use of these products as a food for infants. I can conceive of the economic possibilities and importance of its use in certain sections of our country where dairy farming is not practiced and where the milk supply is limited.

At the last meeting of the Legislature of the State of Delaware an act was passed providing for the Delaware reconstruction commission for child welfare, which was placed under a nonmedical directorship and the sum of $50,000 was appropriated for its maintenance. After this commission had been in operation for a considerable length of time and a number of child health clinics had been established in Wilmington, the Public Health Service was appealed to for assistance in carrying on its work. An officer was assigned to cooperate with the commission to assist in the proper conduct of this work and in making recommendations to the legislature for the permanent organization of child welfare work in the State of Delaware. As a result of our work the number of health centers has increased, wider publicity has been given to child welfare work, and there has been secured from private sources $16,000 for the organization and establishment of two school dental hygiene units to operate in the schools

of the State. The service representative has been appointed medical director of the commission and has also been appointed by the State board of education director of its school medical inspection work.

In response to the request of the State board of health of West Virginia and of the State board of education, we sent a mobile dental hygiene outfit to this State, which comprised a dental surgeon well qualified to preach and practice the doctrine of mouth hygiene as related to school children; an assistant for prophylactic work; a portable dental outfit; a moving-picture film; and a supply of toothbrushes and tooth paste generously donated by the American Red Cross. This unit was instructed to visit the county seat or the principal town of as many counties as possible during the school year. The work consisted of (1) examination of mouths of selected groups of children to demonstrate to the people of the community the problem, (2) demonstrations of dental prophylaxis and the conduct of toothbrush drills as a training for teachers and children in mouth hygiene, (3) projecting moving-picture film at which time brief talks were given on mouth hygiene, and (4) conferring with the local health and school authorities and influential citizens with a view to inducing the community to purchase a dental outfit, secure a full-time dentist, and use the county seat as a base to extend dental facilities to the sadly neglected children of the more remote districts. This work has resulted in the establishment or promise of establishment of at least 14 school dental clinics in the State.

Work in Maryland has been largely with school children. School inspection work has been conducted in 73 schools of Cecil County, in which over 3,000 were given physical examination and approximately 200 children, reported by the teachers as in need of such examinations, were examined mentally. In addition to the inspection work numerous addresses were given on timely health subjects; public health literature was distributed to the parents along with notification of physical defects, and in a number of instances follow-up work was done by a temporary school nurse. This work has resulted in very widespread interest in the question of health supervision of school children throughout the country, and a school nurse has been engaged to assume charge of this work with the beginning of the next school year.

In the city of Baltimore the service has been cooperating with Dr. McCollum, of the Johns Hopkins University, in nutritional studies of a number of children judged to be suffering from malnutrition, as determined by ratio of height to weight for given age periods. Early in the school year Dr. McCollum had approximately 10,000 school children in congested districts in the city of Baltimore weighed and measured, and of this number about 1,500 were considered under weight, according to available standards. These underweight children were given an intensive physical examination by service officers,

and a certain group of them was selected by Dr. McCollum for follow-up work in their homes. This consisted largely in advice to the parents regarding rest, exercise, mastication, hours of sleep, ventilation, proper foods, and balanced diets. In some instances the mothers were advised as to the making of a family budget and in the choice and preparation of foods. In no instance was the income of families supplemented or any food bought. It is hoped by periodic weighings and measuring in connection with this follow-up system to establish a practical method of overcoming defects of malnutrition.

The service selected about 275 children from this group who were found suffering from one to five more or less remediable physical defects, for the purpose of having these defects corrected with the consent of the parents and determining, by means of periodic weighings before and after correction, the effect of them on growth and development. This work has been progressing finely, but it is too early to give any report of significant results.

In response to the request of the State board of health and the request of the acting governor of Missouri, we have been conducting a State-wide investigation of child hygiene in this State. Dr. Jones, the State health officer, and Dr. Knight, who represents the service in this work, are present and will tell you in greater detail what has been accomplished. We have avoided, in every instance where possible, going into a community where there was not a fair prospect of the community putting into effect such measures as were recommended by officers of the service with the approval of the State board of health. A number of communities, as Dr. Knight will tell you, have engaged in some form of child-health work at local expense. Furthermore, we have succeeded in taking advantage of the potentialities of the voluntary organization in Missouri with greater success than heretofore has ever been done in any State. A number of volunteer agencies have joined with the Public Health Service and coordinated their activities to one common end with those of the State board of health.

In response to the request of the judge of the juvenile court of the District of Columbia, the service has undertaken mental and physical examinations of the delinquents appearing before this court as a part of an investigation of mental hygiene relating to the children of the country. A commissioned officer has been assigned for the mental examination of these delinquents, assisted by a woman physician, appointed as acting assistant surgeon, to make physical examination of girls. In addition to these examinations, routine examinations were made from the standpoint of incidence of venereal infection, including smears for gonococci and Wasserman tests. Furthermore, through the generosity of the District of Columbia Chapter American Red Cross a psychiatric social worker has been added to this force for follow-up work in the homes.

I am not going to take up the time of this conference to describe in detail this work, but I crave indulgence to the extent of being allowed to report a part of one week's work which is typical of the whole work. During this week 32 white males were before the court on truancy charges, disorderly conduct, incorrigibility, grand larceny, petty larceny, indecent assault, and forgery. These children ranged in age from 10 to 16 years. According to mental examinations, 13 of these were normal mentally, 6 were retarded, 5 were mental defectives, and 7 were constitutional psychopathic inferiors, and one a case of dementia precox.

Some one stated the other day—I think it was Dr. Freeman—that we do find cases of insanity among children. Indeed, in the course of my investigations I have found quite a number of insane children, or children potentially insane, who were attending school, which findings serve to emphasize the importance of mental hygiene in children.

In the State of Oregon we are conducting as a part of our mental hygiene work a State-wide survey of the feeble-minded, delinquent, and dependent classes. This work was undertaken on the request of the University of Oregon, which is conducting this survey in response to a resolution of the State legislature. This request received the indorsement of the State health officer. We are attempting in Oregon a thing which has never been attempted before; that is, to get the whole State of Oregon interested in helping us make this survey. We are enlisting the aid of doctors, lawyers, teachers, and preachers, and other prominent citizens, and also social-service workers and volunteer organizations in filling special cards relating to these classes and returning them to the service officer who is director of the survey. Later experts are sent to selected districts to confirm these reports. What is the effect of this? According to the State constitution, the enactments of the legislature for new work carrying an appropriation must be submitted to the people. By the methods which we are following in conducting this survey we are educating the people of the State regarding the problems of these classes of the population, so that any new laws relating to them which may be passed by the next legislature as a result of the recommendation based on this survey will receive ready indorsement when finally submitted to the people.

In conclusion, I should like to say a few words regarding the standardization of field-investigation forms. When we first started our investigations in Missouri, it became necessary to devise cards for recording data which would help us to evaluate the needs of different communities and serve as a basis of recommendation to a community regarding the nature of child-hygiene work which should be undertaken.

The first card (I have here for each of you gentlemen a complete set of these cards) is known as the family schedule card.

(Child's surname.) (Given name.) | (Name of school.) | (City, town, or district.) | (County.) | (State.)

Sex: M. ....., F. ..... Color: W. ....., C. ..... Age ..... Date of birth: Month ....., day ....., year 19.....

CHILD'S SICKNESS RECORD DURING SESSION.

	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Number of days enrolled											
Number of days present											
Number of days absent—Toothache											
Number of days absent—Colds											
Number of days absent—Other sickness											
Number of days absent—Other causes											

CHILD'S SCHOLARSHIP RECORD. Age at which child commenced school ..... What grades were repeated by child prior to this session?.....
Grade in which child is enrolled this session ..... Character of child's work at school during the present session (mark the proper grading with X): Excellent ..... Good ..... Fair ..... Poor ..... Very poor ..... Was child promoted or failed at the end of this session? ..... If child failed this session, what in your opinion were the causes of failure? .....

(Above to be filled in by teacher.) (Below to be filled in by nurse.)

Name of parent or guardian ..... Occupation ..... Remarried: Father ..... Mother .....
Father living? ..... If dead, state year ..... Cause of death .....
Mother living? ..... If dead, state year ..... Cause of death .....
Number of brothers living ..... Dead ..... Cause of death .....
Number of sisters living ..... Dead ..... Cause of death .....
If child has any of the following diseases during the present session, enter month in which it occurred: Chicken pox ..... Diphtheria .....
Measles ..... Mumps ..... Scarlet fever ..... Smallpox ..... Whooping cough .....
Other diseases causing absence from school (state what and give month of occurrence) .....

Any tuberculosis in child's home ..... Has child been exposed to tuberculosis in home .....
Vaccination (smallpox) ..... No. times ..... When last successful (year) ..... Vaccination (typhoid) ..... State year .....

U. S. PUBLIC HEALTH SERVICE, PHYSICAL EXAMINATION OF SCHOOL CHILDREN—Child Hygiene Form No. 4.—Revised Feb., 1920. 3—9644 (OVER.)

FIG. 12.

EXAMINATION AT BEGINNING OF SESSION.

Date of Examination ....., 192
Height (with or without shoes) ..... ins.
Sitting Height ..... ins.
Weight (with or without shoes)—no wraps ..... lbs.
Chest expansion: Exp. ..... Insp. .....
Hearing (watch): Right ..... Left .....
Vision (Snellen): RV ..... LV .....
Vision with glasses (Snellen): RV ..... LV .....
Teeth, number defective .....
Teeth, number missing .....
Teeth, number fillings .....
Use of toothbrush .....
Enlarged tonsils .....
Mouth breathing .....
Skin eruptions .....
Pediculosis .....
Other defects or deformities .....

HEIGHT AND WEIGHT MEASUREMENTS AT END OF SESSION.

Date of making ....., 192
Height (with or without shoes) ..... ins.
Weight (with or without shoes)—no wraps ..... lbs.

(ABOVE TO BE FILLED IN BY NURSE.)

Date of Examination ....., 192
Defects auditory apparatus .....
Defects visual apparatus .....
Trachoma .....
Nasal defects .....
Throat affections .....
Heart disease .....
Pulmonary disease .....
Mental and nervous disease .....
Orthopedic defects and diseases .....
Speech defects .....
Spinal defects .....
Blood parasites—malarial* .....
Intestinal parasites* .....
Skin and scalp conditions .....
Nutrition: Exc. ..... Good ..... Fair ..... Poor ..... Very poor .....
Mental age .....
Other defects or deformities .....

* Microscopic examination to be made only in suspected cases, but routine in infected localities.

(ABOVE TO BE FILLED IN BY MEDICAL INSPECTOR.)

(BELOW TO BE FILLED IN BY MEDICAL INSPECTOR.) TREATMENT RECORD Date .....

Nature of defect .....
Treatment advised .....
Date of notification of parents .....
Case treated by ..... Date .....
Nature of treatment .....
Result of treatment ..... Date .....
3—9644 ....., Medical Inspector.

FIG. 13.

(THIS SIDE TO BE FILLED OUT BY PARENT OR GUARDIAN.)

Date of child's birth: (Month) ..... (day) ..... (year) ..... Has the child's birth been registered? .....

Have you its birth certificate? ..... Has the child had any of these diseases before 1920? (Answer "Yes" or "No" in each space):

Chicken pox? ..... Diphtheria? ..... Scarlet fever? ..... Measles? ..... Mumps? .....

Smallpox? ..... Whooping cough? ..... Influenza? ..... Pneumonia? .....

What serious illnesses from other causes has the child had? .....

.....

Is there any tuberculosis in this child's home? ..... Has this child ever been exposed to tuberculosis in the home? .....

Has the child been vaccinated for smallpox? (Answer "Yes" or "No") ..... How many times? .....

When was the child *last* vaccinated? (Month) ..... (year) ..... Was the vaccination successful? .....

Has the child been vaccinated for typhoid fever? (Answer "Yes" or "No") ..... When? (Month) ..... (year) .....

Has the child been immunized against diphtheria? (Answer "Yes" or "No") ..... When? (Month) ..... (year) .....

Occupation of parent (father, if living) or guardian .....

His post-office address .....

(Signed) .....

Date ....., 192

U. S. Public Health Service, Physical Examination of School Children—Child Hygiene Form No. 7.—Revised Feb., 1920. 8—10is

FIG. 14.

(Child's surname.)	(Given name.)	(Name of school.)	(City, town, or district.)	(County.)	(State.)

Sex: M ..... F. ..... Color: W. ....., C. ..... Age ..... Name of parent or guardian .....

Record of Physical Examination: Height with (without) shoes ..... inches. Weight with (without) coat or wraps ..... pounds. Does child hear well? ..... Does child see well? ..... Does child wear glasses? ..... Number of teeth decayed ..... Is child habitual mouth breather? ..... Other defects or deformities ..... Date ....., 192.....

CHILD'S SICKNESS RECORD DURING SESSION.

	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Number of days on school roll											
Number of days absent—Sickness											
Number of days absent—Colds											
Number of days absent—Toothache											
Number of days absent—Other causes											

If child has any of the following diseases during the present session, enter month in which it occurred: Chicken pox ..... Diphtheria ..... Measles ..... Mumps ..... Scarlet fever ..... Smallpox ..... Whooping cough .....

Other diseases causing absence from school (state what and give month of occurrence) .....

.....

Child's Scholarship Record: Age at which child commenced school ..... What grades were repeated by child prior to this session? .....

Grade in which child is enrolled this session ..... Character of child's work at school during the present session (mark the proper grading with X): Excellent ..... Good ..... Fair ..... Poor ..... Very poor ..... Was child promoted or failed at the end of this session? ..... If child failed this session, what in your opinion were the causes of failure? .....

.....

Height with (without) shoes at end of session ..... inches. Weight with (without) coat or wraps at end of session ..... pounds

Date this record was begun ....., 192.....

Date this record was ended ....., 192.....

Teacher.

(THIS SIDE TO BE FILLED OUT BY TEACHER.)

FIG. 15.

RECORD OF ILLNESS IN FAMILY WHILE UNDER SUPERVISION.

Date of onset.	Person affected.	Duration in days.		Physician.	Nurse.	Nature of sickness.	Termination.
		Sick.	In bed.				

This side of card is to be filled out by permanent district worker and should include *all* illnesses occurring in the family.

TREASURY DEPARTMENT
U. S. PUBLIC HEALTH SERVICE.
Child Hygiene Form No. 8.
Family Schedule.
[illegible]

FIG. 16.

(Surname.) (Given Name.)

Street and No. ..... City, township, or district ..... State .....

Length of residence: In this locality ..... yrs. ..... mos.; in this house ..... yrs. ..... mos. Was preceding residence in town? .....

In country? ..... Number of moves made in last two years .....

HOUSEHOLD CENSUS AND FAMILY INCOME (make entries for every member of family living at home).

Name.	Sex.	Age.	Relationship to head of family.	Defective—Crippled—School attendance.	Other record.	Usual amount of milk daily.	Earnings in last two months.
1							$
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							

Do not fill in this space

Estimated Family Income per ..... $.....

No. Ammains .....

Family Income per Am. $.....

Total Receipts from Boarders and Lodgers in last two months .....

All other Income in last two months .....

Total Family Income in the last two months .....

PARENTS OF CHILDREN AT HOME (make entries for dead as well as living parents).

	Father of Nos.	Father of Nos.	Mother of Nos.	Mother of Nos. .....
Country of birth				
Race				
Color				
Occupation				
Education				
If dead, cause of death				
If dead, age at death				

MOTHER (make entries for living mother only).

Date of marriage .....

Number of *living* children .....

Number of children born *alive* at full term .....

Number of children born *dead* at full term .....

Number of children *before* full term: Alive ..... Dead .....

Is mother now pregnant? ..... How many months? .....

Total number pregnancies of this mother .....

HOUSEHOLD MILK SUPPLY. Own Cow? .....

Buy milk? ..... Number quarts consumed daily .....

HOME.

House ..... Apartment ..... No. rooms occupied by this household ..... Rent per mo. ..... Owned? .....

Water supply: Well ....., spring ....., city .....

Inside flush toilet ..... Privy: Open .....

Sanitary .....

Yard or other outdoor play space .....

General appearance of home .....

NOTES:

Date on which this record was made ....., 19....

(Signed) .....

FIG. 17.

(Child's surname.) (Child's given name.) (Name of family head.) (City, township, district.) (State.)

Name: Of child's father ....; of child's mother ....

Sex: M. .... F. .... Color: W. .... C. .... Born: Yr. 19...., mo. ...., day .... Alive now? .... Age now ....

PRENATAL: How many months before birth of *this* child did the mother see a physician? ....

Have an examination by physician? .... Was urinalysis made? ....

Condition during pregnancy: Mental ....

Physical ....

DELIVERY: Phys. .... Midw. .... Oth. attd. .... Hrs. in labor .... Easy .... Mod. .... Diff. .... Forceps ....

AT BIRTH: Full term? .... If not full term, what month? .... Born alive? .... Born dead? ....

Weight at birth .... Condition at birth .... Eyes treated? ....

FEEDING: No. months this child was breast-fed *exclusively* ....

IF NOW LIVING: Is child at school? .... Name of school .... Grade ....

Is child employed? .... Occupation .... How long? ....

DEATH (if born alive but is dead at this date): Date of death, yr. 19...., mo. ...., day .... Age at death ....

Cause of death ....

Mother's explanation ....

BIRTH REGISTRATION: Has this child's birth been registered? ....

TREASURY DEPARTMENT,
U. S. PUBLIC HEALTH SERVICE.
Individual Card.
Child Hygiene—Form No. 9.

(Signed).... Date ...., 1920

2—9440

FIG. 18.

(Mother's surname.) (Mother's given name.) (Name of family head.) (Address.) (Date first visit.) (Case No.)

Age .... M.... W.... S.... No. this pregnancy.... Age at marriage.... Age first menstr. .... Date last menstr. ....

Date quickening .... Duration present pregn. .... mos. Date expected confinement .... Nutrition: Exc. ....

Good .... Fair .... Poor .... Very poor ....

PREVIOUS HISTORY OF SICKNESS: TB.... Cancer.... Wass. .... Malaria.... Hookworm....

Mental disturbance during previous pregnancies and confinements ....

PRESENT PREGNANCY: Nausea.... Vomiting.... Condition bowels.... Headaches ....

Shortness of breath.... Disturbed vision .... Œdema....

Bleeding .... Vaginal discharge .... Eclampsia ....

PHYSICIAN'S FIRST EXAMINATION: DATE ...., 19....

Heart .... Lungs ....

Breast .... Nipples....

Blood pressure.... Urine....

PHYSICIAN'S LAST EXAMINATION: DATE ...., 19....

Heart .... Lungs ....

Breast .... Nipples ....

Blood pressure.... Urine ....

Fœt. heart sounds .... Presentation ....

MEASUREMENTS.

Inter sp. (Normal=9.5 ins.–21.1 cm.)....

Inter Crest (Normal=10.5 ins.–26.6 cm.)....

Ext. conj. (Normal=7.5 ins.–19.0 cm.)....

Ext. oblique (Normal=9.0 ins.–22.8 cm.)....

Opinion as to duration of pregnancy....

CONFINEMENT: Date .... Phys. .... Midw. .... Oth. ....

Dur. labor .... hrs. Instr.? .... Why? ....

Presentation....

Perinæum torn? .... Repaired ....

Complications ....

Date of discharge .... Result ....

HISTORY OF CHILD: Full term? .... If not, at what month of pregnancy? .... Miscarriage.... Alive....

Dead.... Sex: M.... F.... Weight at birth.... Eyes treated?.... Birth certificate filed?....

One month after birth: Weight.... Feeding: Breast.... Mixed.... Artificial....

Eyes infected?.... When?.... Condition umbilicus....

Encouragement maternal nursing.... (Signed) ....

U. S. PUBLIC HEALTH SERVICE—PRENATAL CARE CHILD HYGIENE—Form 10.

Inspector—Nurse.

FIG. 19.

RECORD OF PRENATAL CARE

Date of Visit	Clinic, Home	Bowels	Urine. Al	Su.	Q.	Mother's Condition.	Physician's Advice.	Advice Given.

RECORD OF CARE DURING PUERPERIUM

Date of Visit.	Temp.	Pulse.	Mother's Condition.	Weight of Baby.	Nursing Care Given

FIG. 20.

(Child's surname) (Child's given name.) (Name of family head.) (Address.) (State.)

NAME: Of child's father _____ Of child's mother _____

Sex: M____ F____ Color W____ C____ Born: Yr. 19____ Month _____ Day _____ Exact age at this date _____

FEEDING PRIOR TO THIS DATE: No. months breast-fed *exclusively* _____ No. months mixed feeding _____ No. months bottle-fed *exclusively* _____ What foods used in mixed feeding? _____

In bottle feeding (when bottle-fed exclusively)? _____

ILLNESS PRIOR TO THIS DATE: Age at which child had measles _____ German measles _____ Chicken pox _____ Whooping cough _____ Scarlet fever _____ Diphtheria _____ Poliomyelitis _____ Influenza (in fall and winter of 1918-19) _____

Pneumonia _____ Typhoid _____ Rheumatic fever _____ TB (specify) _____

Is child subject to croup? _____ Tonsillitis? _____ Constipation? _____ Diarrhea? _____ Earache? _____

VACCINATION: Smallpox? _____ When last successful? _____ Typhoid? _____ When? _____

Diphtheria toxin-antitoxin immunization) _____ When? _____

PHYSICAL INSPECTION: Nutrition—Excellent _____ Good _____ Fair _____ Poor _____ Very poor _____

Teeth—Dentition normal? _____ Or delayed? _____ No. decayed _____ Toothbrush used daily? _____ Irreg.? _____ Never? _____

Nose and throat—Mouth breather? _____ Suspect adenoids? _____ Enlarged tonsils? _____

Evidence of disease—TB? _____ Malaria? _____ Hookworm? _____ Syphilis? _____ Rachitis? _____

Mental defects evident _____

Physical deformities _____

Weight at this date with (without) clothes _____ Height at this date without shoes _____

(*Signed*) _____

U. S. PUBLIC HEALTH SERVICE, INFANT AND PRESCHOOL CARE, CHILD HYGIENE.—FORM NO. 11. Date _____, 1920.

FIG. 21.

RECORD OF VISITS: CLINIC AND HOME.

Date.	Age.	Clinic. Home.	Weight.	Feeding.			Notes.
				What foods?	Number in 24 hours.	Irreg.?	

2—9445

FIG. 22.

When a community signifies the desire to engage in child-hygiene work, a preliminary investigation is made of the community resources, and contact is effected with the official and volunteer agencies of the county to determine the extent to which their active cooperation may be expected. On receipt of a favorable report, a survey party is then sent into this community, which makes a house-to-house visit, using the family schedule card for recording data showing the size of the problem. This card is supplemented by child-hygiene form No. 9 (fig. 18), a card for recording data relating to the individual children of each family who come within the scope of the proposed work.

Objection has been raised to the family schedule card on the ground that such card, in addition to serving its purpose in securing data which will be informative to the health authorities, should also serve to direct the attention of individual investigators to definite lines of inquiry. This card as devised does not answer this latter purpose, a number of the questions which may be found on similar cards in use elsewhere having been intentionally omitted. I am of the opinion that a worker who requires such printed guides to community work is not well qualified for the work in question.

For example: It is of but little interest to a health officer to know whether or not an individual housewife has a bathtub or a washing machine because this is a state of affairs which can not be remedied by him. However, such information as relates to the family income or to the number of crippled children residing in a community is of extreme interest to the health authorities leading to corrective measures.

When the preliminary survey is completed the cards are returned to the State board of health and studied from the standpoint of the form of child hygiene work the community may profitably undertake. Usually in the less populous communities this takes the form of the employment of a public health nurse. Following her appointment she is given a duplicate of these two cards filled out with such information as would be useful to her alone. In other words, with these cards in her possession she knows the social and economic status of all the families in the community, the location of expectant mothers and the number and location of infants and children of preschool age and the children attending school who reside in the community. By this means much time is saved. The permanent worker is also provided with child hygiene Form No. 10 (figs. 19 and 20), for recording data relating to prenatal care and child hygiene form, No. 11 (figs. 21 and 22) for recording data relating to the health of infants and children of preschool-age, specimens of which are attached hereto. Furthermore, the permanent worker should be required to record all cases of sickness which occur in the family visited by her in her routine work, a place for which is provided on the reverse of the family schedule card. In fact, I am convinced that the general use of some such device as this by States in which a large number of public health nurses are employed will result in very accurate morbidity reports.

Form No. 4 (figs. 12–13) is designed for use in schools where a school nurse or a school physician, or both nurse and physician may be employed, and Form No. 7 (figs. 14–15) for use in schools where neither nurse nor physician is employed. This latter is intended to be filled out by the teacher in cooperation with the parents. I am quite convinced that the wide use of a card of this character in the schools of the State would make available much valuable information regarding the physical status of the school children of the State, their growth and development and school progress, the prevalence of communicable diseases according to season, and the rôle of the ordinary illness of childhood in causing absences from school. In other words, with this information at hand on a State-wide basis the health officer would be in position to arrive at very accurate averages of the physical development of the children of the State according to sex and one-year age periods. The health officer also would be in position to evaluate in terms of dollars and cents the cost to the State of preventable diseases which cause loss of so much time from school and prevent so many children from taking full advantage of the educational facilities provided by the State.

Finally, I wish to recommend to the local agencies the undertaking of only such work as the community can carry through. We all know what constitutes the ideal and if it were possible we should

like to organize in every community prenatal clinics, baby health centers, child dispensaries, increased facilities for obstetrical care and lying-in attention. However, but few communities, sad to say, are prepared to undertake all of these things at once and a recommendation embracing all of them would, in all probability, be so discouraging from the standpoint of cost as to cause a number of them to decline to undertake any work of this character whatsoever. Indeed, a great deal of good can be done by the simplest of measures. For example, an intelligent worker can do much toward reducing maternal and neonatal mortality by giving tactful and intelligent advice to mothers regarding such things as exercise, rest, diet, use of laxatives, care of the breasts, periodic examinations by the family physicians, preparation of lying-in room and provision of a suitable layette for the expected baby. In the same way an intelligent worker making free contact with nursing mothers can do much to reduce the infant mortality rate by advising mothers to take well babies to the family physician for periodic examinations and advice as to how to keep them well, by instructing them in the care of the baby especially with reference to bathing, sleeping, feeding, clothing. In fact, so much can be accomplished in this manner that I sometimes think we are not justified in recommending to a majority of the communities at first the undertaking of this form of work on a more extensive scale.

(Adjourned to Thursday, May 27, 1920.)

MORNING SESSION, MAY 27, 1920.

DISCUSSION OF CHILD HYGIENE ACTIVITIES OF THE SERVICE.

The second day's session was called to order at 10 o'clock a m., Surg. Gen. Hugh S. Cumming presiding.

Dr. Dowling. I do not think we should let Dr. Clark's paper go by without discussion. If he had had more time he might have given us some additional information. From the investigation we made in Louisiana, Dr. Clark's suggestions strike me as being most interesting. Unfortunately we have not had proper inspection in all schools up to date, and every time we have tried to get an act passed by the Louisiana Legislature some interests have objected. I don't know how we are going to have this done as it should be done unless some provision is made for it through the health department. I shall take back with me the suggestions of Dr. Clark, his memoranda and literature, with the hope that we may be able to put these suggestions into effect in Louisiana.

Dr. Jones. I would like to inform you of the very generous assistance given by the United States Public Health Service to our State in the time of need. As we all know, this subject of child hygiene

has very rapidly aroused public interest, so much so that in our State, at the last session of the legislature, two bills were introduced providing for the establishment of a division of child hygiene within our department of health. Each was passed and approved, on the strength of which we went to our appropriations committee, but failed to secure an adequate appropriation for creating the division. In response to our request to the Public Health Service, they consented to furnish us with sufficient personnel to make an investigation and demonstration in Missouri, in which could be formulated standards for further work, and at the same time to organize a division within our department. The people have taken great interest in the project, particularly the women. I know of no single public movement since the close of the war that has been taken up with so much enthusiasm. Shortly after the work was started in a few communities, numerous requests from other places were received, asking for instructions and assistance, local organizations showing a perfect readiness to take it up and follow it through. I wish to take this occasion to express to the United States Public Health Service our appreciation for this cooperation and if I may refer to rural sanitation a subject of yesterday's discussion, I wish also to state that we are very appreciative for the work of that nature done by the service in our State. The work originally was confined to one county in the lead and zinc mining district. The results obtained therein were so marked that adjoining counties have requested the same assistance, and upon the results obtained, we are able to base our claims to the coming legislature for the much-needed support for public health protection in Missouri. Dr. C. P. Knight of the United States Public Health Service, for your information, will take up more in detail the child hygiene program being followed in Missouri.

Dr. Hurty. I thought it might be well for me to mention here the difficulties we have met in Indiana in our efforts to secure a compulsory medical inspection law. The greatest opposition has come from the chiropractors, patent medicine men, and the Christian Scientists. They are strongly organized against the proposition. The chiropractors are against everything that the regular medical profession is for, and the Christian Scientists are against everything that has the word "medical" in it, and so we get ahead of them to a slight degree by calling the bill "Health supervision bill" instead of "Medical." The word "medical" makes them a little wild, like the red rag to the bull. The health supervision bill, we will call it. We have failed in three legislatures to get a compulsory bill. We now have an optional law permitting any school district to establish medical inspection, but very few do it, even after we call attention to the very great importance of the matter. One little experience

with trachoma will illustrate this point: In one county we found in the rural schools inspected, 90 cases of trachoma—all rural; we sent kind letters to the guardians and parents in regard to it, urging them to look after the eyes of the children whom we found infected. This letter was followed up to find out how many parents had attended to their children's eyes. We found that 100 per cent of them had failed. They didn't do it, could not do it, wouldn't do it. I thought I would investigate and find out why. I went with the county health officer visiting the homes where we knew they had trachoma. We knocked at the first door, introduced ourselves, told the good farmer's wife who we were. She listened to us in a stupid way, and when we got through our story we said, "Now, why didn't you attend to Mary's eyes?" She replied, "You doctors have some kind of a game—you want to get our money away from us!" That was the answer—that was the "why."

In another place a woman in a nasal tone (many people in Indiana use their noses to talk through and sing through, and that ought to be broken up) said, "Oh, well, I had them sore eyes when I was little; I outgrowed them; guess she will, too." We have tried hard in the kindest manner possible to get their confidence, but they have notions in their heads that have been put there by the odd cults, such as osteopaths, chiropractors, Christian Scientists, and other mental nondescripts, that the doctors are after their money, and even when I told some of these people that we had provided at the county seat a doctor who would do their work for nothing, provided they would simply say they could not afford to pay for it, and insisted the doctors were not after their money, the reply would be, "Well, they want to get it somehow." So this notion is the great difficulty we have to overcome, and I believe in the end we will find that it will be necessary to force public health into the home by law, just as we now force education. The people would not educate until compelled to. Only a certain number—about 10 per cent—that can think of mankind would do it. The 20 per cent that can think what others think would also educate their children without compulsion, but the 70 per cent that can't think at all wouldn't do anything, and they were compelled to educate. So I believe eventually we will not only have compulsory education and compulsory military service (when we went to war we had to draft an Army, as you know, a voluntary system would not do), but we will have to resort to compulsory health supervision and make people look after their children under penalty. I want to speak again about business men in this connection. Where you seek to secure the aid and help of the business man don't forget that he is a power—he is a force; secure his help in this good work. Indeed, the business man is in the saddle;

he is running things; if you can get him interested things will happen, for the business men bring things about. They have a trick by which they do make things happen. Well, don't forget now, if you appeal to the business men you will get good action out of them if you appeal in the right way. Appeal first to their sordid qualities—their avarice and greed—but not too strongly; don't do any misrepresenting.

The promotion of health is a matter of economy. Our supreme court decided that a child 9 years old killed by the Big Four Railroad was worth $10,000. Life is money, according to the courts, and the practical business men know this. Let us save our children, not only from the railroads but also from other causes. Let us get the money idea before them, but don't forget also to appeal to their sentimental and emotional nature, and you will get farther than by appealing only to their avarice. Arouse the emotional—arouse the sentimental in them by drawing a picture of how much happier the children are who have their defects removed and their health given back. You will succeed better. Don't count out the emotional and sentimental nature of man in public health work.

Dr. BANCROFT. I hesitate to differ from Dr. Hurty, he being one of the senior members of this conference, but I feel that we have had experience in California that would make us radically differ from the doctor when he says that compulsion is the way to get this thing over. I feel that the minute compulsion is mentioned (except so far as we compel one person to make his child safe for the others) we retard things rather than make them progress.

Dr. HURTY. Compulsory education has produced no such results.

Dr. BANCROFT. No; but I believe that compulsory remedying of defects in our children strikes in most Americans a feeling of independent action rather than education. I feel in California at least we have had this fight for about 12 or 15 years, and we have found that it is much better to say to a person, "We will examine your child unless you object"; on the other hand, in case of epidemics or of infectious diseases, we say, "Your child must be examined or must remain at home." We have found the great argument these people have is the fact that *compulsion* is desired, and if we had compulsion actually in effect, I feel sure we would not have the success which we have in school inspection, and we are somewhat advanced in school inspection. I am not familiar with the exact number of cities, but practically every city of any size has medical school inspection. It seems to me that one of the great things we need in order to educate the people to the value of these things is some definite results. For a number of years I have tried to get the nurses and doctors engaged in school inspection to give us some definite results. We have many

statements like these; we have examined 10,000 children; and have found 10,000 adenoids; we have removed 5,000 of them. We admit this is of great benefit, but we need some definite statement of results like this: "This child has been remedied of this condition and his weight has been increased, or his scholarship has increased and is normal." I would suggest to Col. Clark that some sort of division in the Bureau of Public Health in Washington be established—not a separate division, but some reception bureau where every person engaged in child hygiene throughout the country could record a definite result on a definite child or definite group of children. Some results of that sort have been obtained in California, and I feel we need every argument not as to the number of examinations made, but as to the absolute results obtained.

Surg. Gen. CUMMING. I am sure we would like to hear from our colleague in Canada.

Dr. SEYMOUR. Inspection of schools is done in different ways in Canada. For a number of years medical inspection of the schools in the city of Toronto was done under the direction of the school board of the city. The question as to whether school inspection should be under the management of the school board or health department of the city was voted upon by the ratepayers, and the vote was very largely in favor of placing the medical inspection of schools under the charge of the city health department. The change for the better has been very marked. The work is now carried on under the direction of physicians of the health department, assisted by public health nurses of the same department.

In the Province of Manitoba districts are formed, and the inspection of schools is under the control of the provincial board of health, with a resident public health nurse in each district. The nurse visits the schools under medical supervision in her district, as well as performs the duties of a district public health nurse. Two-thirds of her salary is paid by the municipality in which she resides and the other third by the Provincial Government. The nurse's work is closely supervised by a lady superintendent of nurses, and all the work done under medical direction. This plan is giving most excellent results, as was shown by the report of Dr. Gordon Bell, chairman of the Manitoba provincial board of health, at the recent meeting of the Dominion council of health. This method appears to be giving much better results than is the case where the medical inspection of schools is done under the direction of the department of education.

I think that inspection of schools is a matter of so great importance that the question should be carefully considered by health authorities, and what may be recognized as the best method be given approval. School inspection should be standardized instead of having localities

trying all sorts of experimental methods, such as having nurses examining school children without medical supervision.

As you are aware, we have had in Canada legislation enacted providing for a Federal department. As you may be aware, two years ago we had in Canada legislation enacted providing for the creation of a Dominion department of health. There is in connection therewith the so-called Dominion council of health, which consists of the deputy minister of the department of health, as chairman, a lady representing child-welfare work, a lady representing the women of Canada, a labor representative, a representative of scientific medical research work, and the chief medical officer of each of the Provinces. This council has so far met twice a year and the result of its work is already apparent in the unification of provincial health laws, Dominion collaboration of vital statistics, and other matters.

The scarcity of medical and nursing help created as one of the results of the war, necessitated the establishing of so-called health centers. With the Union Municipal Hospital we are trying to have the required number of physicians and nurses, district nurses to reside in the nurses home with which each hospital is provided, and from this center they help to provide nursing help for the district.

At these small hospitals, which are intended primarily for emergency and maternity cases, we have established a short course of training for nurses in hopes of meeting to some extent the shortage which exists in rural districts. The course consists of 12 months spent in the hospital, and three months at the provincial sanitorium for tuberculosis. After which, if their work has been of a satisfactory nature, and the examination is passed, a certificate entitling them to registration is given. It is our aim to recruit as far as possible for this work young women from the immediate entourage of the hospital, in hopes that when their course is completed they will return to their former homes and help to supply the nursing requirements of the district.

The shortage of medical help in some of the districts of Saskatchewan is very acute. In one particular locality, which is said to have a population of about 2,000 within a radius of 25 miles, it has not been found possible to obtain a medical man to locate there, notwithstanding the offer of a bonus of $125 per month for a year, besides other inducements. The Red Cross is also prepared to help by the establishment of an outpost in that district.

I mention this at this particular time because we would like to have some more of the good men to go there from this side of the line. We have a number of men practicing in the Province of Saskatchewan who are graduates of Northwestern University and other universities, certainly doing good work and we would like to get some more.

The SURGEON GENERAL. I am almost sorry that I asked Dr. Seymour to talk; I am afraid some of our doctors will be going up to Canada with all these inducements.

Dr. HARPER. I want to say, Mr. Chairman, that while I do not want to differ with Dr. Hurty I must confess I can not agree with him on the compulsory side of school inspection. We tried to get a compulsory law on several occasions and aroused a large opposition. In 1911 we lost such a bill in the legislature by a tie vote, and the opposition was of such large proportion that we deemed it unwise to reintroduce the bill in successive legislatures. We have not, therefore, a great deal of opposition to school inspection at the present time. There was originated in Wisconsin, by one of our lady physicians, in conjunction with the Children's Bureau at Washington, a program for weighing and measuring of school children. I was in the dark on that. It seemed to me like a great big momentous problem with results that were to be questioned. I remember at the first meeting I asked a good many questions and expressed myself as opposed to the program. I want to say that I have changed my mind. Nearly every child of school age in Wisconsin, especially in the lower grades, has been weighed and measured. While you may not get anything immediately from such procedure, yet the report goes home that the child is underweight and the parents wonder why. This causes them to make inquiry of the family physician, and the family physician examines them and frequently discovers adenoids, affected tonsils, malnutrition of a certain type, or ailments which have not been given proper attention. Almost invariably when the physician examines the individual child and offers remedies for improvement, the parents will accept his advice. There is more competition in our State at the present time between the school children to get up to what is known as the proper standard of weight than in any other line.

If nothing more than the weighing and measuring of children is done in the school, it is a big thing to get into application the remedial measures of correcting deformities when found. When it comes to adenoids and tonsils, I am almost afraid that there won't be a child in the State having their original adenoids and tonsils left. There is nothing compulsory about this. It is simply that there is an element or an undercurrent going on, on the part of the parent, that they want these children brought up to the average standard. We found also that the opposition to physical examination of school children originates, as Dr. Hurty has stated, more from the chiropractors than from anyone else. Christian Science people are now very reasonable on that question, and if you have the right persons to manage the program, Christian Scientists are not going to object. We don't compel the school child to be examined for physical defects.

It is left optional with the parents, and as a result many schools have 100 per cent examination, sometimes 99 per cent, sometimes not more than 95 per cent. We instruct the examining officials to notify the teacher when the examination is to be made and the teacher in return is to notify the parents, inviting them to be present for such examination or, if they will give a written notice that they do not want their child examined, then such child is exempt from an examination. We occasionally have half a dozen notes come in, "I do not want my child examined," and the text of the note is complied with. All of the other children, however, will be examined and the five or six will go on without an examination. This small number will soon feel lonesome and in a short time will have nothing to talk about. This will prompt them to go to their parents and ask, "Why can't we be examined? Charlie was examined. He had enlarged tonsils and now they have been removed." The next time the examiner comes around these children who were exempt at the first examination will say, "Why can't we be examined too?" and practically every time, these children will receive an examination on the second visit of the examiner. They want to get in under cover after all.

They had their own way originally and they feel they can have it again, if they so desire. At the same time they feel they are losing something if they do not comply with the usual program. We have discovered something further. The nurse who goes into the school can handle the people much better than the average medical man, so far as the actual examinations are concerned. In other words, the nurse gets the cooperation of the community, and whether they can be as efficient or not, remains to be seen. On communicable diseases, however, as Dr. Bancroft, of California, had stated, if she suspects a child in the school has a communicable disease, that child must submit to an examination or be sent home and must stay there until he can come back with a certificate from the family physician, saying that there is no communicable disease present. As things are going now, I am most hopeful that we won't need, in our State, compulsory examination of school children. I believe if we have the proper people making the examinations, that outside of the offspring of the chiropractor, we are going to have very little opposition from any source, and if we get 99 per cent peacefully, it is better than to try to get 100 per cent with a whole lot of opposition, because in the end, we get much more cooperation. We have more work than we can do now with the children and people who are willing to come under the public health provisions. Why not give this class of people the advantage of public health activities, and not materially concern ourselves with a few malcontents, who do not appreciate the advantages of such examinations? I would

like to say to the Public Health Service that the weighing and measuring proposition is worth a try-out in any locality as it creates a competition in having better health conditions that you can't start any other way.

The SURGEON GENERAL. Any further discussion?

Dr. DILLON. I just wanted to make a suggestion to Dr. Hurty in regard to securing legislation for the physical inspection of school children. So long as the medical profession of Nebraska fathered such a measure so long was it defeated. In 1919 the medical profession from the background guided and directed a measure of that kind, introduced in the legislature by a member from a rural community, fathered by the Federation of Women's Clubs of that State and the State Teachers' Association, and that measure was passed almost without opposition; guided and directed, if you please, from the background by the medical profession, placing the supervision of it under the State department of health, and while it has been in operation only this year we are getting some splendid results from it.

Dr. OLIN. Michigan is having a rather peculiar experience along this line at the present time. We have no compulsory law and we don't want any. About three months ago I notified the women's clubs throughout the State that the Michigan department of health would send out a corps of medical men and nurses to make school inspections in the rural districts. The only stipulation was that this service must be requested by the community. We have now received so many applications that I believe our force will be busy for the next year with these schools on the waiting list. We are taking one county at a time. We give the parents a chance to request that their children be not examined, and then we carefully avoid having anything to do with these children. We term these people "conscientious objectors." The last session of the legislature passed our reorganization bill, and we are now engaged in reorganizing our entire department. One of the clauses of the bill gave the Michigan department of health the power to close all public or nonessential meeting places. "Conscientious objectors" immediately raised a storm of protest.

"You recognize that there are certain classes in your community that should be controlled?" I asked of them.

"Yes," they agreed; "but our churches all have theater seats, or are separated, and we attend to the ventilation. We don't believe in disease or anything that harm can come from; but even so, we provide for all that."

"How do you want to arrange this thing so that the other people can be taken care of?" I questioned.

They replied that they would like to have the law affect all places except churches. To this I agreed, providing we were to decide upon the number of people allowed in the church at any one time. This clause was written in the law. So the Michigan department of health controls all gatherings of any kind, with the exception of church services, and we can restrict the church service attendance. The "conscientious objectors" were gaining their point and we were gaining ours. Consequently, there was no objection to the bill. They did not consider that we might cut down the attendance to the preacher and janitor. With regard to school inspections, no fault is found, because we do not molest the children of the "conscientious objectors." We don't care what their religious belief is or how they treat themselves, providing they do not endanger their neighbors. I want them to thoroughly understand that I am not going to molest them so long as they do not put their neighbors' health in jeopardy. I think that the last session of the legislature was the only session at which members were not flooded with telegrams and letters protesting certain laws. After this first experience with the "conscientious objectors," I called a meeting and told their leader that we had their mailing list; that we knew who their members were; and that we intended to let every legislator receiving protesting telegrams know whether they came from members of this society. Of course that would take away a lot of their influence.

"I do not want to fight," I declared, "and I am not going to molest you. But here is the legislation to put through this session; what are your objections to it?"

In the end, when they simmered it all down, they could not object to much—some inconsequential clause; one or two little changes were made to suit them. We had no trouble. No; I don't want compulsory school inspection, because the word "compulsory" starts a fight right away. The better way is to lead the objectors up to the legislation and put it across before they know what has happened. I think we can go further without the compulsory clause.

Dr. DeVilbiss. It is very gratifying to me to see the interest taken in child hygiene at this meeting and to watch year by year the public-health profession's growing recognition of its importance. If Dr. McLaughlin were not here, I would say that I consider child hygiene the most important of all public-health work, and the keenest entering wedge we have for the entire public-health program.

Perhaps the simplest way of bringing before you the scope of child-hygiene activities is to give a short outline of what we are doing in one State which is just beginning a child-hygiene program—this program begins at the child and will work forward through the preschool and the school-age periods, work out methods for protecting the health of

children in industry and for the social pathological group—the crippled, the defective, and the dependent. At the same time the program will work backward to include stimulation of birth registration, the providing of proper obstetrical facilities, and prenatal supervision. To reach the babies, and through them the rest of the family, we are establishing baby health centers. We are using this term to designate what is in effect a Baby Day conducted at regular intervals through the summer or the entire year, as the case may be. Many communities know what a Baby Day is, and those who have conducted them feel the need of a continued period of regular supervision of the babies. So it is easy to ask the community to provide facilities for examining babies at regular intervals by the establishing of a baby health center.

In the State of Georgia, the State Pediatric Society cooperates with the division of child hygiene of the State board of health by the members giving their services to examine babies in the baby health centers and to outline treatment. In rural districts this may serve two purposes at once—the babies are given an examination by a specialist, and the local doctors may have the benefit of the clinic.

This fall we will go into the schools with an extensive height and weight taking and follow-up campaign. When the physician goes into the schoolroom as medical inspector, ordinarily, and tells the mother that her child has infected tonsils she may believe him and she may not. To persuade her to act on his advice is a very uncertain and sometimes difficult matter. But the minute her child is put on the scales and found underweight, she is told something in language that she can understand, and she wants to know how she can remedy it. The correction of the physical condition is now on the other foot. It is now not something which the doctor or the teacher wants done, but it is something which the mother and Johnnie himself feels keenly about. It has been found that if the child is promised that he is likely to gain the coveted number of pounds so that he can rank 100 per cent in weight with the rest of the class, the average child will eat oatmeal, go to bed early nights; in fact he will do almost anything he is told to do. When he fails to gain in weight or to come up to the normal, he will voluntarily consult a doctor and he will eat on the advice given.

In connection with the height and weight taking campaigns do not overlook the assistance which the home demonstration agents can give you. Following the height and weight taking, the next big health problem is the nutrition of school children and babies, and the establishment of nutrition clinics in connection with the schools and the baby health centers. In small towns and rural-school districts we do not have school nurses for home visits, so we bring the mothers with their children to the schoolhouse to meet the home demonstra-

tion agent for personal advice in feeding. Very often the local physicians assist by inspecting for the principal defects associated with malnutrition—bad teeth, enlarged or diseased tonsils, faulty posture, soft muscles, and pale color. When giving feeding instructions, the home demonstration agent emphasizes the importance of having physical defects remedied. In other words, she assists in putting physical inspection of school children on a sound basis and in getting physical defects corrected.

With the nutrition clinics well established it is a simple matter to add a school dentist, to organize adenoid and tonsil clinics and, in time, to add one medical service after another. Beginning with the simple baby health center and working along the lines of least resistance, with the parents and the community cooperating every step of the way, it is possible in most communities in the course of four or five years to have established a complete health center in charge of a full-time trained health officer.

Dr. Dowling. May I suggest that, because of the length of the program, Dr. Clark be asked to close the discussion?

Dr. McCormack. Before closing our schedule, I think it is unnecessary to emphasize anything that Dr. De Vilbiss has said, but there is no question that, with a pair of scales in a schoolroom, you can take the scales off parents' eyes quicker than with anything else in the world.

Dr. West. Dr. Knight is in charge of the demonstration in Missouri, which, according to my understanding, is one of the biggest things of its sort the State has ever put on, and I do not believe this discussion ought to be closed until Dr. Knight has a few minutes to say something about his work.

Dr. Knight. On entering Missouri, the Public Health Service proposed to carry on field investigations and demonstrations in child hygiene, of which Dr. Clark spoke yesterday.

It proposed to organize for the State a division of child hygiene. It proposed to assist local communities to carry on this work and to stimulate them with the realization that health supervision of their children is a community problem.

In organizing this division of child hygiene, an attempt has been made to coordinate the existing unofficial organizations working, or contemplating work in child hygiene. It was the function of the Missouri Tuberculosis Association to donate funds for publicity, and to detail personnel for field organization. The Red Cross agreed to take care of the public health nursing service relative to child welfare. Benefit from the University of Missouri was obtained in detailing in 14 counties their home demonstration agents who conducted the nutrition clinics in the schools. The Woman's Christian Temperance

Union, looking forward to newer activities, agreed to furnish expectant mothers with maternity outfits and comfort kits to all who needed them.

The projects have been the stimulation of birth registration; the carrying on of an intensive school survey; inauguration and establishment of health centers; State-wide publicity, including distribution of literature and delivering of lectures throughout the State.

It is a little early to try to give results, but if you will permit me, I shall read a slight resumé.

Dr. Knight read the following paper:

To date, 25 towns have had a school survey consisting of height and weight taking, physical examinations with their attendant follow-up work to obtain the correction of physical defects, and nutrition clinics. Approximately 35,000 children have been examined. In 11 towns health centers have been established and equipped and funds appropriated for a permanent community nurse. Four counties were selected as demonstration centers, the staff acting primarily as a full-time county health organization. Each unit consisted of a woman physician trained in public health work and especially child hygiene, two or more public health nurses, nutrition specialists, trained school workers, and field investigators. In these counties the full program has been commenced.

The nutrition clinics have been an especially interesting and helpful feature. Instead of class work, individual mother and child clinics have been tried. The mother of the underweight child is invited to the school. The nutrition worker sits down with the mother and the child and has a confidential talk. The object of having the mother and child is that one serves as a check upon the other and more reliable information is obtained. In individual clinics the mothers will give information and ask questions that they would not do in the presence of other mothers. The details of the child's habits are brought out and the nutrition worker gives written suggestions as to how to improve the child's physical condition. Not only are the habits of eating, sleeping, and exercise discussed, but also the attention is called to the physical defects, for the nutrition worker has the report of the physical condition and can explain to the mother the necessity of having the defects remedied.

The physical examinations have demonstrated to the communities the need of further work. Even the leaders have been surprised at the conditions found. In one community, above the average socially, 48 cases of trachoma were found in a school of 350 children, probably brought in by a few children.

Not enough time has elapsed to tabulate the information obtained on a State-wide basis, but in one average town the following informa-

tion was obtained by the examination of 2,500 children from the first to the eighth grades:

	Per cent.
Defective teeth	40
Underweight	58
Enlarged tonsils	40
Unclean teeth	29
Defective vision	23
Defective hearing	14

Reexamination of underweights showed:

	Per cent.
Fatigue posture	66
Pale color (clinical evidence)	60
Defective teeth	51
Mouth breathing	30

Data obtained at nutrition clinics:

	Per cent.
Diets not approved	94
Lacking fruit and vegetables	64
Inadequate milk	54
Excessive sugar	36
Excessive meat	42
Coffee drinking	30
Irregular and inadequate sleep	75

One surprising fact brought out is that poor nutrition does not seem to depend upon economic conditions as the largest percentage of underweight in several towns was found in schools in the well-to-do districts. This was accounted for largely by late hours, unbalanced meals, and candy eating between meals.

The work is still in a pioneer stage, more in the nature of an experiment to determine the best methods. In an address before the American Medical Association at New Orleans in April, Admiral W. C. Braisted said he had been unable to find any adequate book for school children for teaching physiology and hygiene. I think he should have gone a step further and said that there has been devised no adequate system of teaching physiology, hygiene, and physical education. I have looked over some books used in Missouri schools and none of them have been written in a style which would appeal to the imagination of the school child in the teaching of this subject.

I have here a rough draft which has not yet had the approval of the service, but I want to give you this outline. It is an outline of daily lessons to be included with the physical examination of the child. There is also an outline for teaching the subjects for the benefit of the teachers. The idea is to obtain the interest and appeal to the imagination of the pupil. I want to take this matter up with Dr. Clark to get his opinion of it. This is for the rural schools particularly and I would like to put this system in effect this fall in teaching the principles of personal hygiene and combine an ideal in

this study which will appeal to the child. We, of course, contemplate putting this system in the normal schools for the teachers this summer to learn whether or not this is a practical method of teaching hygiene. We want to place this system in the schools and take it up the first month of school opening in September. It will be our endeavor to cover the course as given. The first month there will be weighing and measuring of each child and finding the average weight; discussions on undernourishment and food values; correct method of sleeping, eating, fresh air, etc. The next month there will be testing of vision—lessons on defective eyesight. The following month there will be the examination of teeth, with teaching of oral hygiene and so on until the study is completed.

Dr. C. W. Goddard: Pardon me for a few moments. I regret to see this subject pass without calling your attention to work that is being inaugurated by the State board of health of Texas. Last September we organized four new bureaus in the department: Child hygiene, communicable diseases, public health education, and public health nursing. The legislature very kindly gave us a reasonable appropriation for their maintenance. We have at present the bureau of child hygiene fairly well developed, and I appreciate Dr. Knight's report of the constructive work in Missouri. I am also pleased to find that our work is very much in line with the work being done by Dr. Knight in Missouri.

We have in five counties a well-developed county department of health, consisting of a whole-time health officer, a public-health nurse, sanitary inspector, and stenographer. In some of the counties we have more than one nurse; in those counties the department of health handles the work of the child hygiene bureau, and we are establishing health centers, which are controlled by committees composed of representatives from various organizations already existing This work is pretty well developed in five counties, and in part in 32 other counties. In these 32 counties we have only a county department of health, consisting of a part-time health officer, a public-health nurse, and, in a few instances, a sanitary inspector. The same program will be carried out in other counties as rapidly as possible. We are hoping to extend the work over the entire State. We have in the field four representatives who will coordinate their work with the State University in the holding of child-welfare conferences, and who will, following these conferences, establish child health centers and develop the work as outlined. We feel quite encouraged with the work we have been able to accomplish in the past four or five months.

Dr. Clark. I referred yesterday to the questionnaire sent to the State health officers. This has been assembled and returned to all the State health officers with the request that they make such corrections

as are necessary to bring it up to date. Bear this in mind—just one word as to my conception of what is a mandatory school health law. I think that any school inspection law should be mandatory, in that it demands there should be provided facilities for medical school inspection in cases of contagious diseases, which involve police powers and can be controlled by the State legislature.

Surg. Gen. CUMMING. It is the general desire that malaria shall be the next subject taken up, with discussion by Dr. Fricks, of the service.

Dr. MCCORMACK. As a tribute of the great love and respect we have for Dr. Carter, I suggest that the conference rise.

(The conference rose and greeted with prolonged applause Dr. Carter.)

The SURGEON GENERAL. We are all glad to hear from Dr. Carter.

Dr. CARTER. All I can say is, we who have done a long work and are ready to stop, salute you. I have done a long work, and I am very much gratified by your expression of sympathy and commendation.

The SURGEON GENERAL. We all in the service feel that Dr. Carter is "the father of the service," and practically made modern quarantine, the modern fight against disease, not only in yellow fever but malaria. He led where others followed and perhaps others got a great deal more credit than he.

MALARIA.

(Dr. L. D. Fricks made the following report:)

I have been directed to give you a brief statement of the progress of the cooperative malaria work now being carried on by the Public Health Service, the International Health Board, and the various State health authorities who are interested in the malaria problem. It will be impossible for me to give you the exact figures because of the fact that we are still in the midst of our cooperative campaign, but I will try my best to stick to absolute facts—please note this, Dr. Hayne—and I dare not go far astray, since there are a number of you here who know the status of this work, and will be able to either verify or refuse to accept the statements I make.

This program of cooperative malaria work was begun last year, and was based on work which had previously been conducted in Arkansas and by the Public Health Service in extra cantonment zones. I do not believe that any of us feel that it will be the final solution of our malaria problem by any means, but it will give us a breathing spell and accomplish a great deal at local points, from which we expect to be able to devise means and find ways of extending the work over the entire malaria section of the country. Under this cooperative agreement the malaria control work was to be conducted under the direction of the different State health officials and the supervision of the Public Health Service, with funds secured primarily from local sources supplemented where necessary by the State health department and the International Health Board. In beginning a work of this character on a cooperative basis, it was inevitable that difficulties should be encountered—perhaps some mistakes were made, but we have certainly made considerable progress.

One of the principal difficulties encountered has been in keeping the sanitary engineers originally employed in making malaria surveys and preparing estimates of

cost for malaria control demonstrations. Commercial concerns were able to offer them very much better pay than the Government could afford and therefore we have had many changes in our personnel since the work began. Also some difficulty was encountered in arranging for the financing of these malaria control demonstrations. In many places the local authorities were able and glad to furnish the entire amount of funds required and in these cases no delay occurred, but where arrangements had to be made for outside assistance some delay was perhaps inevitable. These appear to me to have been the two main problems which we had to meet in inaugurating this widespread cooperative program for malaria control in 11 different States; and when it is considered that the undertaking is unusual in its arrangement and involves the cooperation of different agencies, I think we may well feel some pride in the progress which has been made up to the present time. I will give you a brief review, however, of the outline of the work and its progress up to the present time in each State, in order that you may judge of its importance and success for yourself.

In undertaking the cooperative program for malaria control one or more sanitary engineers were assigned to duty with each State health officer in 11 of the malarious States. It was expected that the State health officer would select various towns within his State in which malaria surveys would be made by the sanitary engineers, estimates of cost of malaria control prepared, local sentiment for the work sounded, and where conditions were found favorable for selection, the sanitary engineer would assume supervision of antimalaria construction work. Under this arrangement the following operations were conducted:

State.	Sanitary engineer.	Towns surveyed.	Towns selected.	State.	Sanitary engineer.	Towns surveyed.	Town selected.
Alabama	2	22	7	North Carolina	1	9	3
Arkansas	2	8	4	South Carolina	2	5	3
Florida	1	5	1	Tennessee	1	9	2
Georgia	2	14	3	Texas	3	31	12
Louisiana	2	7	3	Virginia	2	6	2
Mississippi	2	17	5				

In making selection of the various localities in which malaria control measures should be conducted, it was suggested to the State health authorities that they favor those communities in which mosquito-malaria control would be feasible at a reasonable cost and in which the community sentiment was strongly favorable to the work and therefore would probably insist upon its continuance in the future. I feel that this was a very wise basis for selection although in reality it is not a question of how much it costs to get rid of malaria, but rather of the returns which the community receives from the money expended for this purpose. That is, if the per capita cost for malaria is great the community can well afford to spend a much larger amount for its control than if the malaria cost is small. The per capita cost as estimated for malaria control in the above communities is slightly over $1. Effort was made to secure uniformity in cost for different towns selected in order that more just comparisons might be made in results accomplished for small expenditures.

This I believe is a fairly comprehensive outline of the cooperative program for malaria control which is now under way. We have attempted in every way to carry out the program in the spirit in which the different cooperating health agencies entered into it, thus giving all possible assistance to the State health authorities in carrying out this work which we consider their own. In no way has the program been altered except that an ichthyologist from the Bureau of Fisheries has been detailed to advise and assist us in making use of fish as a means of mosquito control, thus supplementing

drainage operations and in certain places materially reducing the cost. In one place, Athens, Tex., we have attempted to control mosquito production entirely by the use of fish. One difficulty which we have encountered, and which is probably worthy of your attention, is the absolute necessity in initiating this work of showing the people immediate and definite results. At Baton Rouge, La., where an excellent piece of work had been conducted insofar as malaria control was concerned, the people were not satisfied with the work because mosquito production inside the city was not placed under thorough control. On the other hand, we found in Dothan, southeast Alabama, where the people were at first decidedly uninterested in the work, that after draining a swamp which extended up into the outskirts of the town, and thereby killing, according to the sanitary engineer in charge, two wagon loads of snakes, the people were delighted and gave the work their hearty support. The securing of the interest and support of the local communities for this work is fundamental, because it will profit us nothing to carry it on for a season and then have it fail for lack of local support.

Our hope in undertaking this work is that it will be extended from these areas and be enlarged upon and ultimately will reach the rural districts where, as we all know, the real malaria problem of the South is to be found. I think, myself, that there is no question but that during the next season and in the years to come, the State health officers will have requests from more towns for malaria-control demonstrations than can be handled under the present program, but I do not feel that even when all the urban communities of the South have been reached the malaria problem will be solved. We all know that malaria is a rural problem. We may have some differences of opinion as to just what relation it bears to the health of the entire United States; personally I feel that it is a local health problem, but one of such extent that its economic importance affects the entire Nation. Dr. H. R. Carter and Dr. L. O. Howard, who have studied the malaria problem in the United States longest, have estimated the economic losses from malaria and are able perhaps to give us an approximate idea as to their extent, but I think the best the majority of us can do is to wildly guess it. We say, "perhaps a billion dollars," but we know very little about the extent of malaria in the South; there are no exact records showing its prevalence in any State. We do know that there is no danger of the spread of malaria from south Georgia to north Georgia, from west Tennessee to the mountains of east Tennessee under present conditions. As a matter of fact, one of the State legislatures absolutely refused to appropriate money for malaria control because it would benefit only one section of the State.

With such conditions confronting us it seems to me that the problem of malaria control is a local health problem. I believe that the States of the South are entitled to all the assistance they can get from the Government and from commercial interests in working out this problem because of the enormous economic importance of malaria to the entire United States and its business interests. In the South we have an area of 400,000 square miles, capable of feeding and clothing the entire United States, which is handicapped, we may say burdened, with malaria. The people of this area are entitled to relief, but I believe that this relief should be offered by and through the State health authorities. They must build up in some way local health units capable of handling their own malaria problems. The general impression has gone out that malaria control can best be effected by some outside agency. This impression is perhaps based on the fact that malaria control in the Tropics has heretofore been conducted in this manner; for instance, by the United States Government on the Isthmian Canal and by the British Government in the East Indies; but in the southern United States we have an entirely different governmental problem, for although we have a large Negro population in the South (at least one-half or more in some States), yet the white man is responsible for local government, and ultimately

the responsibility for the solution of the malaria problem of the South will rest upon him and his local government.

It appears to me that the different State health authorities who are most vitally interested in malaria have not at the present time adequate bureaus or divisions and personnel within their health departments for handling the malaria problem. We have few accurate records of malaria from any State in the South, and I feel that before we can go out into the rural communities and undertake malaria control we must have these records. We must know where malaria is. Probably we will find when we begin our attack on the border-line areas, where malaria is not so uniformly prevalent, that a very small and well-directed effort will result in complete eradication there.

Surg. Gen. CUMMING. It has been suggested by a good many gentlemen that in view of the number of papers the remarks be limited to five minutes.

Dr. MCCORMACK. I suggest that Dr. Carter be given as much time as he likes, and then the time be limited to five minutes.

Dr. CARTER. In the first place I agree with Dr. Fricks that malaria control is primarily a local problem. I had a long talk with old Sir Timothy Wilcox about three years ago on the drainage in Mesopotamia; he was in control in Tiflis at that time and he greatly blamed us in America for not taking up the matter as it was done by the old Babylonians and Abyssinian monarchs; that is, by putting all the improvements for the land on the land itself. That we can not do; but it is fair that the States that have malaria should bear the expense of eliminating it. What we are doing, however, with the assistance of the International Health Board, is simply pioneer work, demonstration work, to show how malaria can be controlled and the cost of controlling it. I think it is perfectly fair and safe to say that where the work has been done hitherto the percentage on the investment has been from 500 to 1,000 per cent, and if that can be generally believed in the malaria sections, it will in time be generally applied. I would think shame of myself to spend a dollar in malaria control if I did not expect to get $5 back on it. If you remember, some years ago, one of our American sanitarians attempted to evaluate what was received per unit of expenditure in the different methods of sanitation. He did not have malaria on his list; he was a northern man working in northern countries, but, frankly, for hookworm and malaria you get a bigger result per unit of expenditure than in any other method of sanitation I know of. It means, of course, that where the thing seriously prevails it is a long problem. No one need think that malaria is easily controlled or easily gotten rid of; it is cheaply controlled and cheaply gotten rid of if you count the benefits received, but, absolutely, it is neither cheap nor easy. These demonstrations with 5, 10, or 20 to the State where malaria is controlled should go on to 100 times that number until the thing is wiped out, but it will not be in my generation. Malaria controlled in one

place in the country leads to better farming and more money; that leads to extension of malaria control, which leads to better farming and more money and you make an endless chain for good in social and pecuniary conditions. Improved health makes improved conditions. In Dr. Rankin's State, since I first knew it, the improvement has been fully 1,000 per cent in malaria. It has been brought about by better crop methods and better malaria control, etc. I look for the elimination of malaria as the result of improved living and agricultural conditions, and by demonstrations showing how to control malaria.

Dr. BANCROFT. In California we have been forced to help ourselves; and two years ago there was enacted a mosquito abatement law by which communities might join together and, taxing themselves, form a malaria abatement district. This was found to be very effective in the rich districts, but in the districts which needed it most sufficient funds were not obtained, so it is proposed to request the State to pass a law allowing funds to be given to counties which need it, and there is every hope that this will pass at the next legislature. There is one community which had a malaria rate of 2,487 per 100,000 as told by a careful survey, and in this community $10,000 was spent in 1915. At that time the people in this community were absolutely discouraged; pretty nearly everyone in it had malaria and people could not be induced to come into the district at all. I might say the problem there was introduced by the extension of irrigation. This $10,000 was spent and the community has changed entirely from one where the people were absolutely discouraged to a very live community, and they are the most enthusiastic boosters for the remainder of the State. In this community they have estimated that from the standpoint of real estate transactions there is five times the improvement now over that time, and from the economic viewpoint a great improvement has taken place. Another problem that is rather peculiar in California is that there has been a great extension in the area planted to rice, and the United States Public Health Service has an officer there, Dr. Purdy, who found that the Anopheles mosquito does not breed in our rice swamps. No reason as yet has been found for that rather peculiar condition which differs from most parts of the country. We feel that in California we have a very hopeful outlook. We feel that the only way to get rid of malaria is through oiling and drainage.

Dr. DOWLING. At Montgomery, Ala., on the 26th of April, it was my pleasure to meet with the committee on malaria control and education when we discussed the best methods for the control of malaria in the South. Drs. Abercrombie and Welch and one member of the South Carolina development organization were present.

During the day we met with the Southern Settlement and Development Organization, which has its headquarters in Baltimore, Md., and they made the frank and surprising statement (most gratifying to me) that they could not bring desirable immigrants into the South until they could tell the truth and they could not do this "until the South cleaned up." I quoted a paragraph from Dr. Carter's letter in which he stated that if we would provide for the eradication of malaria by getting rid of the Anopheles mosquito and also provide for the proper disposal of human excreta, the South would have no greater health problem than that of any other section of the Union. From information at hand, malaria costs in the Southern States from $3.88 to more than $16 per acre, the latter in the extreme Southern States. I am sure, if properly presented to the farmers and legislators (even though we should need Dr. Hayne, of South Carolina, and some of his statisticians to help us with the figures) they would agree that the eradication of malaria would be a good financial proposition. Louisiana, I am glad to tell you, has the approval of the governor for progress in health work; he has ordered the health bill rewritten and we expect to have a department for the control of malaria in the State. At a meeting in the city some time ago I made the statement when Dr. Fricks happened to be present, that all Southern States in which malaria prevailed should have a department of malaria control. We hope for it in fact very soon.

Dr. Rankin. The most important thing in this local malarial work is the initial survey, that is, the establishment of the base line of endemic infection. We selected with the Public Health Service four communities in North Carolina in which to do this work. We went to the doctors and to the women's clubs of these communities and asked them for an estimate of the malaria. The women appointed a committee and went from house to house with the cards we provided them, and as a result of their survey in these four towns reported a malaria incidence of from 18 to 21 per cent. Now, the great pity is that we did not accept the facts as stated by the doctors and the citizens of the town and go ahead with our malaria reduction work, because if we had done that, if we had not eliminated a single case of malaria we would have had something very greatly to our credit, but we decided first to check up the local survey, the doctors' statements and the women's statements; we sent a doctor and a sanitary inspector into one of these towns. They took the same cards the women used and took one-fourth of the homes and they found from 2 to 3 per cent infections. You see what a tremendous reduction we would have had if we had accepted the statements of their own people, and placed ourselves in the classification given statisticians by Dr. Hayne, of South Carolina.

I mention this because this whole malaria question rests upon an accurate preliminary survey. The doctors said that in these towns from 20 to 60 per cent of their practice was malaria; think what that means. The average doctor has about 250 calls a month or 3,000 calls per year; suppose he has 50 per cent of his calls malaria—1,500 per year—20 per cent would be 600 calls for malaria. A novel idea, coupled with a little enthusiasm, makes the biggest liar in the world. You should establish your base line in this malarial work so that no one can dispute it. I don't want to discourage this proposition; it is one of the most important things we can undertake in the South, but I do think it is important to establish your base line and not to accept the statements of enthusiastic citizens and doctors. The result of our survey was that we went back to these towns and said: "We found conditions very different. Your women told us you had 20 per cent malaria; your doctors said you had more, but we found 2 to 3 per cent. We give you an opportunity to withdraw your appropriations if you wish; we don't want to fool you." Three out of the four towns stayed in on the basis of the 3 per cent infection.

Dr. Welch. My experience with the Alabama towns was different from that of my distinguished friend from North Carolina. Our citizens are more patriotic than that. They tried to suppress the fact that they have infections of any description, and I had great difficulty in convincing the appropriating powers that they had any malaria at all; I had to prove it to them before I could get any action. That was not hard to do in the towns we finally selected. We had to make 22 surveys before we could find towns where we could go to the appropriating powers and say, "Here you have malaria," and here we did not have any trouble in getting the appropriation. We sent an engineer and let him take the incidence of the town. We had a State engineer of our own, who helped supervise that work. The work in Alabama has been confined to the small towns. Our survey does not indicate the real malaria incidence of Alabama. The main incidence, strictly speaking, is in the rural districts, not in the rural towns. The towns are drained, more or less, and, where there is malaria in the towns, it is in the outskirts, not in the best residence portion of the town. The difficulties we now encounter are getting out in the real malaria nests and cleaning up the rural districts. This is a very expensive proposition and one that demands more attention as the years go by. The main problems we have to deal with in Alabama are malaria and hookworm. If we had these thoroughly under control, I imagine we would have the healthiest State in the country and the most desirable to live in. We can give you any sort of climate down there, all sorts of soil, all sorts of people, and, incidentally, all sorts of health, since we have malaria, typhoid, and

hookworm. Dr. Dowling, in his allusion to the meeting in Montgomery, did not touch upon the possibilities of that organization, the farmer's settlement and development agency which is now doing work all over the Southern States. If we can get an organization of that kind to help us, as they seem so anxious to do in all of our Southern States, I think our rural problem will then be solved.

Dr. GODDARD. In reference to getting the facts for the initial survey, I have found the best plan to send a member of my staff, with the engineer so kindly furnished by the Public Health Service, into these towns and have him assist in making the surveys. Upon entering the town, we notify the chamber of commerce, business men's league, mayor, or whatever body is interested, that we want the real facts existing. They in turn sometimes advise us that while they are aware of the fact that malaria exists in their town or community, they do not want that fact advertised to the world. We very readily arrange for a mutual understanding in order to ascertain the exact facts and give those facts very little publicity. This course has been pursued very satisfactorily, and the commercial clubs and business men and the doctors have cooperated with us and we have no difficulty in getting the real facts in our initial survey in these towns.

One other point that I may mention is that we find that some of the larger corporations are especially interested in malaria control. For instance, the Cotton Belt Railroad is doing some splendid malarial work themselves, and other large corporations have indicated a willingness to cooperate with us. We are inviting these outside forces to assist us in this malarial control work in cooperation with our plan with the people and the Public Health Service.

Dr. HAYNE. Representing Illinois, New York, Kentucky, Mississippi, and South Carolina, I wish to report that we are doing excellent work in those States, and we do not wish to report in detail that work, because we might discourage those who have reported.

Dr. DOWLING. May I ask Dr. Ferrell to discuss this subject, and then pass on to rural sanitation?

Dr. FERRELL. There is very little that I can add to the account of the work which has already been presented. The relatively large malaria program now under way involves the coordinated activities of the Federal Health Service, the State health organizations, and the local communities. As many of you know, the organization of a piece of work in which a number of different agencies are involved is, at the outset, an extremely difficult task. It so happens in some instances that when the Federal service has funds ready for a certain piece of work, the State is without funds, or perhaps, if the State has money, the Federal Government has exhausted its resources for the particular undertaking. It seems to me, therefore, in view of the

difficulty of securing the cooperation of these agencies in a common cause, that most admirable progress has been made in the organization of antimalaria work. I think that the officers, both Federal and State, who have had this work in charge have true cause for gratification with present developments. The demonstrations of this year, I am convinced, are going to make an appeal to the legislative bodies, and I believe that we should now begin to look forward to the future expansion of the work along sound lines. An excellent start has been made and it now remains to select the towns to which control measures are to be extended during 1921 and subsequent years, and to secure Federal, State, and local appropriations for the work.

Doubtless a number of you know that the Public Health Service, after it had made arrangements for cooperating with the States in malaria work, lost a part of its appropriation. I would recommend that health officers throughout the country, and particularly those of the southern States where malaria is one of the most important problems, cooperate with the Federal service in an endeavor to have the original appropriation restored, and if possible increased, so that the Public Health Service may be enabled to participate on a larger scale in the work of malaria control.

Now, as to State and local appropriations: I believe that the psychological time to arouse the local communities to an interest in malaria control is the summer season, when the mosquito is prevalent and chills and fever are rife among the people. Effort properly directed at this time should stir the people to an enthusiasm for town participation in control measures and should lead them to demand from their legislatures the cooperation of the State in this work. If State-wide enthusiasm is to be created, however, a larger number of men should be assigned for demonstration work, so that instead of surveys in seven or eight towns, 50 surveys might be undertaken at this crucial time when malaria is harassing the people and keeping them from work.

RURAL SANITATION.

Dr. CUMMING. If it meets with your approval, it has been suggested that we take up the matter of rural sanitation.

(Dr. Rankin made the following report:)

I want to discuss three points: First, the desirability, if not the necessity, of a standard in public health work; second, the difficulty of using present standards; third, the possibility of improving standards for measuring the value of public health service. The whole public health proposition is one of salesmanship. When one gets right down to a legislature or board of managers and proposes a piece of work for which they are to pay so much money and for which certain values should be returned, one must have, as nearly as possible, an exact standard for measuring the value of the public health work which follows the investment. When I say a standard, I mean

not one that suits a public health officer, but one that people themselves, the court of public opinion, will approve. We started out a few years ago with a standard of whole-time health departments in the county. Then a few years ago, we recognized that we might get a whole-time health department in the county that didn't amount to anything, that it could not be used, and some of the counties doing health work had their work planned on the unit system; that is, each independent health problem was regarded as a unit, and in 8 or 10 counties a standard plan of work was adopted, so that by taking the average of those counties we had a basis of comparison for the work in all counties. That has been the method that has been followed in my own State for three years, the unit system.

It has recently developed that the unit system will not do for this reason: Units are temporary. You go into a county, you put in your sanitary privies, and that unit is finished, and you can not compare the work in that county where the privy unit is finished with a new county, where the privy unit is in operation. You may have one county with a $10,000 budget, working on five or six units; another county with $2,000 working on two units. You can not make comparisons. You may have one county with 60,000 people and one with 6,000, so you can readily see that the unit standard plan of work is defective. We have followed the custom of calling in our local health officers once a year and letting them sit down around a table and pool all the experience they have gained in the past year and incorporating all their newer ideas in a revised standard plan.

At our last meeting in January this thing came up: The health officer working in a county where there were 400 county dependents (inmates of jails, county homes, county camps, and a county sanitarium) said to me, "I don't get any more credit for taking care of these 400 dependents than the average county gets for taking care of 50 dependents; how are you going to adjust that matter?" One way that suggested itself was to determine a reasonable per capita cost for taking care of county dependents. Supposing we fixed that at 25 cents per month, or $3 per year, then we would give the health officer a credit of $1,200 for taking care of 400 dependents, whereas the man with only 50 would be credited with $150. Our standard would consist in reducing each item of health work to a reasonable financial equivalent.

The possibility of establishing a financial equivalent for every single unit and item of health work seemed not altogether an impossible task inasmuch as that has already been done in a great many instances, as for example, in North Carolina (pardon me for referring to my own experience) we have, in the last three years, innoculated about 200,000 people against typhoid fever. Last year the cost was about 25 cents and this year about 30 cents for complete vaccination. We know about what a reasonable cost for vaccinating people is. Also we can establish a financial equivalent for vaccinating people against smallpox, which is one of the items of county health work. Dr. Fiske, of the Life Extension Institute, of New York, knows approximately what it has cost the Institute for about 200,000 periodic examinations—about $2.50 for each examination. Looking into the question of the cost of venereal disease dispensaries, I found that last year in the dispensaries in North Carolina, the cost varied from less than 50 cents for treatment to $3, the average cost being about $1.75. Our contract with the cities and towns in North Carolina next year for the continuance of the venereal disease dispensaries will be based upon a financial equivalent. Some of these dispensaries have treated from eight to nine persons per month. We have spent $150 to $200 per month for eight or nine people treated, and we are not going to waste money like that any more. The money we pay for treatment of venereal diseases after July 1 will be paid for work done. We will say further to all the counties that have vaccinated their people, here is the financial equivalent for vaccinating, say, 30 cents or 40 cents; we will pay 20 cents for each

complete vaccination. You must keep a card index of the names and addresses of the persons vaccinated against smallpox and typhoid fever, and we will send you a check every six months for such vaccinations.

I believe that it is possible to establish a financial equivalent for every piece of health work. There should be a financial equivalent for educational work. I don't know what that financial equivalent should be. Let us assume that it is worth 10 cents per capita for every person that the county health officer addresses with an illustrated lecture. He goes out and speaks in a school house; he is able to show that there were 85 people in the audience. The financial equivalent is $8.50 for that lecture. Going back to the question of establishing financial equivalents, a financial equivalent for all matters published in newspapers can be established. I don't know any single item of health work for which a financial equivalent can not be established. We propose to get all the data we can bearing upon every item of local health work. We are going to ask the governor to appoint a committee of business men to determine the financial equivalent. Then we are going to give that body all the evidence bearing on the reasonable cost for vaccinating against typhoid fever and reasonable cost for vaccinating against smallpox, and for periodical examinations for building privies, etc. On a basis of financial equivalents we shall pay for work and not for offices and salaries.

Dr. HAYNE. Dr. Rankin has very logically presented his subject. I remember, about two years ago, certain gentlemen representing certain groups of States got together in the Washington Hotel in this city, and presented an extremely logical appeal, as they thought. This was presented to a very high official in the Federal Government, and this was his remark upon reading it: "I can not detect your lack of logic, but do not think that your conclusions are properly deduced from your major premises." Dr. Rankin assumes that the only value of public health is the tangible results of people vaccinated, privies built, etc. John the Baptist—and I take John because I do not care to be sacrilegious—the results of John's work were poverty, dwelling in a desert, and finally having his head taken off and offered to Salome on a salver. Henry Ward Beecher followed in the steps of John, and what were his rewards? Wealth, a wealthy church, and a very large congregation, but the seeds that were sown by John the Baptist have been reaped by the Christian church.

A man goes out into a county and his personality and his talks and his personal association with the people of that county bear fruit later on, and it would be impossible to tell what was the value of that man's work in a county by counting up the number of privies that he built, or the number of people vaccinated. To turn over to business men, of all men, the valuation of health work seems to me the most absurd deduction. I do not believe, and cannot believe, that the work of Metchnikoff, or of Marie, or of Pasteur would have been evaluated by the business men of Paris as of any great substantial value in the world, and we know that these men died poor.

Practically, I can not see how I could offer to pay a health officer according to the premises laid down by Dr. Rankin. We have lying

enough as it is, and I don't propose to put an absolute premium upon it. If a man's salary is to depend upon how many people he has vaccinated, how many privies he may have renewed, improved, etc., it would take a very large force to check him to see if he has done that, and that would increase the overhead costs. Dr. Rankin says he gets his vaccination for 30 cents, and we know the cost of typhoid vaccine from the manufacturer is 30 cents; he probably manufactures his own typhoid vaccine, but, after he kills a couple of children, as we did in South Carolina, he will probably have some manufacturer take up that end of the work.

Dr. RANKIN. I don't believe South Carolina killed those two children, for the reason Dr. Hayne swore that the State did not do it. The first thing is placing the whole question of public health on a humanitarian value, that is not denied; but the fact is that even down in South Carolina they do place a financial equivalent on health work; they do fix the salary of the county health officers and of their assistants; the only difference between Dr. Hayne and myself is the method of establishing this equivalent. The second thing is the question of records and the like. When a health officer says that he has built 833 privies in a year, there should be 833 cards in a card index system. It would take 5 or 10 seconds to make out each card, and we do not accept his statement that he has built 833 privies. The supervisor goes there and asks him for the card index. He picks out the cards and the statement is accepted by what the officer finds and not by what the health officer says. Everything is card indexed. If he says he has vaccinated 3,300 persons against typhoid fever, he must have the names and addresses or his statement would not go.

Dr. WILLIAMS. I hope Dr. Rankin will not get discouraged in trying out these various equivalents. We health officers see a great many difficulties in the way of it. Certainly, if we have some way of establishing a standard measure for work, we ought to do it. Yesterday our great exponent of rural sanitation in one of his discussions, instead of using the term "rural sanitation," spoke of "rural health work." I hope in the future we will abandon the term "rural sanitation," and when we speak of health work in country districts we will speak of rural health work.

The term "rural sanitation" was, I believe, coined in the South, when we began the campaign against hookworm disease, and the big problem in the hookworm campaign was the problem of sanitation, and the term "rural sanitation" has continued as this work has developed. In speaking of the health work, I am reminded of an analogy which, I think, Dr. Hayne very appropriately mentioned in one of his talks: Some blind men were brought to the side of an elephant; the blind men wanted to know what an elephant looked

like. One man caught hold of the elephant's leg, another felt of his side; one caught hold of the tail, one caught hold of his ear, and another his tusks; each of them was impressed with a very different idea of the elephant, according to the part that he felt.

Health work is our elephant, and health officers see the work according to the part that they are next to. The hookworm worker and those of us working in the South see the problems of excreta disposal. Some see malaria as a great health work; others see child hygiene as a great health problem. The venereal disease physician says that he has the great problem, and so on. These are all essential departments of health work. Every one has his own separate problem. We in the South see malaria, and the filth borne or excreta born diseases are our great problems—the greatest that we have. Those farther north, Kansas, Ohio, and New York, do not have those problems at all. They discuss child hygiene and other things.

Up in Saskatchewan, it seems to be the establishment of hospitals. They are going into relief work. It would be wrong if we in the South should go into the establishment of hospitals and look after child hygiene and some of the other things, when we have a limited amount of money to spend. We must consider our mortality returns and our morbidity returns, and see how by the expenditure of a given sum of money we can get the greatest returns. That is the reason we in the South have looked to sanitation as our greatest problem. The control of excreta-borne diseases being our biggest problem, we consider how best we can solve it.

Over a year ago we presented a plan to the Public Health Service to ask their cooperation in an experiment in using sanitary demonstrators. They readily cooperated in this experiment. We speak of sanitary demonstrators instead of sanitary inspectors, because we wanted to get away from the idea of law enforcement. Many parts of the South do not look on a Government inspector with any great favor. The people have a great feeling about their personal liberty, and so on. You can get them to do things by persuasion that you can not possibly get them to do by force. Further, these demonstrators were effective in getting the actual work started. Now, another reason why we started out with demonstrators: It is very difficult to get money from county boards of supervisors. As a rule, the amount at their disposal is very limited. They hesitate a long time to disburse their money or to raise taxes to get money. We can get $1,000 often where we can not get $5,000. It is easier to get that. Then, we will make a house-to-house canvass and see that privies are built. We can start them in health work, and, as a rule, when they do one piece of health work, they get interested in it all, and it is easier to follow it up with other health work.

We will then recommend that they put in a public health nurse. She is one of the great factors in health work. It is wonderful the amount of good public health nurses can do, and it is not difficult, after the supervisors have spent $1,000, $2,000, or $3,000, to get them to put up more money for a health nurse. The next thing is a full-time health organization. That is our development as we are carrying it on in our State.

First, recommend to the county that they put in a health demonstrator. This health demonstrator is supervised by a medically trained health officer. Five demonstrators are supervised by a health officer, furnished us by the United States Public Health Service. Those demonstrators are not medical men, not engineers; they are men of common sense selected because of their personal characteristics. We start them with a salary of $100 and necessary traveling expenses and furnish them an automobile. They are usually men that have been discharged from the Army; men of reasonable education and proper personal qualifications. We have to change about half. If we find they are not making good, we drop them. Some have done wonderful work. One demonstrator made such a success that $25,000 was often put up for community health work. We would never have got that county to approve $5,000 but for his work. By getting $1,000 from them at a time, we have first the demonstrator, then the public health nurse, and then the full-time health organization.

I am not going to take more time now, because I want the officer of the Public Health Service who has had charge of this work to tell a little more about it in detail. I would mention that we have in the adjoining county to Washington, in Virginia, about a half hour's ride from this place, the central headquarters for the full-time health organization being conducted in Arlington. Dr. Cox has that in charge and he will be glad to show you his organization. I hope some of you will be able to go over there and see a full-time county health organization in operation.

Dr. DRAPER. In Virginia, as I suppose in a good many of the other Southern States, there are a considerable number of counties in which practically no health work of any kind has ever been done before. Reports of typhoid fever, of dysentery, of hookworm disease, and other of the filth-borne diseases came into the State board of health regularly for years and years. The State board of health has done what it could to help them after an outbreak of disease, but preventive measures are needed.

The State had a small amount of money and succeeded in getting an allotment of a small amount of money from the Public Health Service, and the question was how to spend that money so as to get

the greatest possible results. Now, in these counties that had never had any health work before, it was necessary to begin on a small scale. We devised a plan of agreeing to allot to a county $1,000 from State and Government sources if the county itself would appropriate $1,000. This would give us a budget of $2,000 for public-health work in the county. We paid a sanitary demonstrator $100 a month and used the balance for paying the cost of automobile transportation, for office expenses, and other incidental expenses that might arise. We had a written agreement with each county as to exactly what we were going to do, and the full time and energy and effort of the sanitary demonstrator was to be devoted simply to establishing the fundamental principles of sanitation. In some of these counties, the mortality rate for typhoid fever was something like 70 per 100,000, or 60 per 100,000. In other counties, infections with intestinal parasites were exceptionally high, and it was reasonable to assume that the things which needed correction related to soil pollution, therefore we devoted our time and energy to that one particular line. Of course, if influenza broke out, or a smallpox epidemic arose, we agreed to help them in any kind of emergency.

Dr. Williams and I visited 11 counties, and every one accepted our proposition. We mapped out three things to be done the first year. The first was to attend to the sanitation of all the towns of the county. In Virginia, when a community becomes large enough to form a city, it just removes itself from the county. The county is composed exclusively of small towns and the rural districts. Most of the typhoid fever and filth-borne diseases occur in small towns, which are in very bad sanitary condition, where people live closely together and where disease is readily transmitted from one to another.

We considered the sanitation of the towns the first most important thing to accomplish. The sanitary officer would first get the mayor and the town council interested in what he was going to do, then make a survey of the town, find out what the sanitary conditions were and what improvements were needed, and then go before the town council and recommend the passage of sanitary ordinances. Invariably, the sanitary ordinances would be cheerfully and quickly passed. It was one of the easiest things we found to do. They had no idea that anything was going to happen after the ordinance was passed. The next thing was to secure the construction of the type of sanitary devices we were going to use. In some of our towns, we used septic tanks and, in others, the can and box system. We would have to find the contractor, get the work done and see that the sanitary equipment was actually installed. I may say here that sometimes, in a town of 200 homes, it has taken a solid year to really get a can and box system established. It has taken the most

constant, energetic and persistent efforts to get the system actually installed.

The second thing we outlined for ourselves was the sanitation of every schoolhouse in the county. It didn't seem very sensible to talk sanitation and personal hygiene and other kinds of health work and yet leave the children the examples of the horrible, indescribable conditions which are present everywhere; so we made it a point to make every school building in the county sanitary. In order to do this, we first appeared before the school board and explained the thing to them. Then we got the business men interested in it, and they have always been the greatest help. We also secured the cooperation of the supervisors, the teachers and the patrons of the schools.

The third objective was the extension of the work into the rural districts as far as possible. We didn't know how far we would be able to go in the rural districts, but we intended to do as much as we could. But now some of our counties have been going for a year, they have completed a year, and I can tell you some of the results.

Take Henry County, for example. It had a mortality rate from typhoid fever of 70 per 100,000 and never had any health work. Some enthusiastic individual asked if I couldn't come over, or send someone down there to give a public health talk. So I went down and found an enthusiastic Red Cross lady who had conceived the novel idea of running me in on the end of a Chautauqua before anyone knew there was going to be a health talk. I didn't enjoy the idea very much, but I did it, and when I got through there were still a few people left. She said, "We do need health work in this county, we need health work in the worst way, but our supervisors won't support it. We haven't been able to get their interest but, as a Red Cross Chapter, we will give you $1,000, and you put in $1,000 and come down here and establish this kind of work." I told her that it would not be in accordance with the policy of the National Red Cross and that if the local authorities would not give their indorsement to this work and were not interested in it, it was up to them to get authorities who were interested in it. I agreed, however, to present the matter to the supervisors at their regular meeting.

The supervisors did appropriate $1,000 for the work, and we sent a sanitary demonstrator down there. Several of the towns appointed sanitary inspectors and paid for them out of their own resources. After about four months, people in the county began to say "It is too bad to get this work started down here and have it stop after a year. Can not we look forward to something in the future?" We told them about the State and International Health Board unit, the $5,000 unit, which requires an appropriation of $5,000 from county sources for the conduct of the work, and the supervisors appropriated $5,000. The supervisors did that all themselves without the aid of

outside agencies. They said, "We do want to do health work." They are going to employ a nurse and pay for everything out of the county funds. That same county got the school board interested in school sanitation, with the result that they gave us $7,000 to build septic privies at every schoolhouse in the county.

In another county we went before the board of supervisors one year ago and told the people about health work. Some of the people who came to the meeting got up and said it was the worst nonsense they had ever heard and they did not want anything like that put across in their county. But the people as a whole became interested and, in the face of the greatest opposition, the county made an appropriation. A week ago I went there again. There were 30 or 40 people in the room; some of them had been opposed to health work the previous year. They said that the work ought to be continued, they had not understood what it was a year ago, but that they believed in it now and appreciated it and wanted it. And when we got through, the chairman said, "Gentlemen, the matter is before you." One of the supervisors who came from the district which offered the greatest opposition the previous year said, "Wal, I reckon as long as this work has gone along for about a year, we might as well continue it." The next thing, $1,500 was appropriated for health work instead of $1,000.

In Rockbridge County we did the same way as in other counties. In Rockbridge County there have been constructed 2,500 sanitary privies during the year. They had a sanitary demonstrator, T. J. Robinson, who was peculiarly and happily fitted for public health work. He organized the county and divided it into different districts. He got a volunteer worker in each district to send him the names of the people in that district, then he wrote letters and sent literature to every person in the county, telling them that it was the law that they should have a sanitary privy and that it was expected that during a certain week, "sanitation week," everyone in the county would carry out the provisions of the law. It was not stated that it was compulsory, or that anything would happen if they didn't do it. It was simply pointed out what the law required and what the sanitary inspector wanted to accomplish. It was very carefully worked out in an elaborate campaign with many newspaper articles. Every person who advertised in the paper had a sanitary phrase to go along with it. We carefully followed this with follow-up letters. The result of it was that, during "sanitation week," we had constructed 1,800 privies, not all pits, some of them were septic privies. In limestone regions, concrete vaults were built. In the particular places where we constructed them, they were the best possible type that could be used. That is the record for just one man. I think Mr. Robinson would like to have Dr. Rankin's valuation put upon his work.

Another county also gave us $5,000 to do the health work. Rockbridge County had previously turned down a $5,000 unit. They will probably put in a $12,800 budget; there is every reason to believe that they will. By beginning with the fundamental principles of sanitation, with just one man working along certain restricted lines, on a common-sense basis, we are able to build up a larger health organization. People are not interested in the building of privies fundamentally, and they have to be taught to do big things in public health work. They must develop the work in logical sequence.

Dr. McCormack. I am constantly impressed with the danger of overemphasizing the importance of some one or other of the activities in general that we are doing and not getting ourselves firmly based upon the organization of county health departments as the fundamental that we are all after. I think the plan Dr. Williams suggested this morning of a county health department is a most excellent one, but it will fail exactly when he fails to get a good county demonstrator, fails to get a good nurse, and, when you fail to get a thoroughly good public health nurse, which is, of course, essential, the plan is a failure. The important thing is that after that, when we do our other work in the organization of our tuberculosis campaign and our child-welfare campaign, that that be done in counties that have organized a more or less adequate county health department. I don't believe it does any good to examine all the school children in a county, unless the work of that examination is going to be continued by a department that can use the material gained. What good does it do to build a hundred sanitary privies in a county, do the memorial work or any work, if you leave that county and do not leave behind you an organized health department? For that reason, it seems to me that it is of extreme importance that we stress to ourselves the value of building permanent organizations, as the fundamental thing we have to do is to build up county health departments and devote our entire knowledge to building them. We have had no other suggestion of quite as much value as Dr. Williams's.

The Surgeon General. There are some exceedingly valuable and interesting papers for this afternoon. There will first be shown a malaria film, gotten up by Dr. Abercrombie and others.

Dr. Lumsden. I would like to submit a resolution, in order that the committee may consider it during the recess. I want to read it to the conference, so that, if there is some suggestion, it might be offered before it goes to the resolutions committee. The time will be short for the committee:

Whereas (1) over 53 per cent of the population of the United States is rural and the food supply for our whole Nation is dependent upon production in the rural districts; and

Whereas (2) physical defectiveness and preventable diseases have been found by extensive, careful studies to be as prevalent in our rural as in our urban population and only about 3 per cent of our rural population is served by local whole-time health departments approaching adequacy; and

Whereas (3) the promotion of rural health work is obviously of local, State, and national importance and, as has been demonstrated, may be secured to the highest permanent advantage by cooperative activities of local, State, and national governmental health agencies; and

Whereas (4) for the Public Health Service to proceed in a businesslike way in effecting its cooperative arrangements with State and local governmental health agencies for the promotion of rural health work a continuing appropriation is necessary; and

Whereas (5) the application of the principle of Federal aid extension to rural health promotion appears entirely logical, consistent with the theory and established practices of our system of government, and is urgently needed at this time: therefore be it

Resolved, by the conference of State and Territorial health officers with the Public Health Service, that the members of this conference individually and collectively indorse the principles of legislation contemplated by the Lever rural health bill introduced in the Sixty-sixth Congress and agree to advocate such principles with a view to bringing about a Nation-wide popular demand upon the Congress of the United States for such legislation.

Adjournment to 2.15 p. m., Thursday, May 27, 1920.

AFTERNOON SESSION, MAY 27, 1920.

The conference reconvened at 2.30 o'clock p. m., the Surgeon General presiding.

Dr. McLaughlin submitted the following report:

ENDEMIC INDEX AND COMMUNICABLE DISEASE CONTROL.

As you perhaps know, I happen to be in charge of the division that is obligated to do whatever is possible to prevent the spread of disease in interstate traffic. I am here to stress the importance of communicable disease control. As you perhaps remember, some years ago one of the most successful of our low comedians had a song which made a great hit all over the country, "You can not play every instrument in the band," at least at the same time, but what you can do and what you should do is to play the particular instrument that is assigned to you for whatever it is worth. My good friend, Arthur McCormack, has intimated that I would emphasize, and I think he suggested I would overemphasize, any particular subject which happened to be assigned to me. That may be true—I will not take issue with him on that—but I desire to say that the communicable disease control is, after all, the fundamental function of the health department activities. I don't say it is the most important section of the health department, but it is the best understood and goes back in a straight line to the beginning of health departments, and, if we do not develop this properly and logically, we have little claim on the people or the legislature for the development of the fad of the moment. Now, if anyone should ask me what is the most important function of the health department, or what is the most important phase of public health, I would have no hesitancy in saying that the most important phase of public health work to-day and the one that promises the best results now and in the future years is child hygiene. There is no question for argument. You may struggle with the present generation, with the old man, and with the middle-aged man, and with the young man, but you get nowhere, because they were not

trained in youth; they have acquired their habits and are unchangeable to a certain extent. You must begin with the young generation. Your biggest problem and your biggest success you will find in child hygiene beginning with the prenatal care of the mother, the care of the preschool child, the care of the school child, and right through into adult life.

I make that confession freely, but I want to come back to communicable disease control, because that is fundamental, and if you neglect the proper development of that you do it to the detriment of the public health. We haven't controlled communicable diseases. I don't believe there is any public health administrator or executive officer who has a better, fuller cognizance of the importance of child hygiene and other public health work than I have, but I still say you ought to complete your machinery for the control of communicable diseases as rapidly as possible. What is control of communicable disease? Upon what is it based? It is based in most instances upon mortality statistics. Mortality statistics are used because they are infinitely superior to the morbidity statistics that we have. If we had proper morbidity statistics, we would work on morbidity statistics rather than mortality statistics, for, as preventive officers, we are dealing in mortality statistics with things that have already happened. We are locking the stable after the horse is out, and too many of us as health officers are going along in the position of the man who does not foresee a situation, but collides with it. What actually happens is, we suppress epidemics and stop outbreaks after everybody knows there is an epidemic. Sometimes the health officer is the last one to think about it. I include myself in the same category. What we need is such a close check upon the prevalence of every communicable disease that we shall know immediately when it has exceeded the normal and establish a normal for that particular health unit, so that it can be called to the attention of the central office and action taken. What are the facts? Ask yourself what knowledge you have of the incipient epidemics. What check have you? How do you know that you have an incipient epidemic? Isn't it true that in the majority of cases your knowledge comes when it has assumed such proportions that everyone knows there is an epidemic? Let us be fair with ourselves. Is there any way in which this thing can be remedied?

In many States it is an ideal set far into the future, because it involves the fair, square cooperation of the medical profession; it means that the medical practitioner realizes he is a health officer without pay and that he has a moral obligation to report immediately cases of disease. When he reaches that point, when he realizes his obligation, the control of communicable diseases will be less difficult. I am not blaming the health officers alone; I am blaming also the profession and the attitude of the general public, because, after all, there are thousands of cases that never see a doctor, the reporting of which are just as essential in the prevention of the spread of disease as those that come under the doctor's care. If we go about it in the right way, it is not entirely hopeless, but it will be slow work. As I say, certain States have some such system. In others I am informed that members of the State board of health, doctors, do not report their cases of contagious diseases. Yet, with a smug complacency, they think they have a real health department and control of contagious diseases.

Now the interest of the Public Health Service in the control of communicable diseases in States is due to this fact, that, while we are charged with the prevention of the spread of disease from one State to another and in the country as a whole, we are told by Congress, in conformity with the Constitution, accentuated year by year in statutes, that we must proceed in this way. We must proceed by utilizing the State machinery, the State laws and ordinances, and only where they are inefficient and ineffective are we permitted to apply Federal ordinances, and then the Federal ordinances must be given to the State and local authorities for carrying out, and only in case of their failure to do so has the Federal Government any authority to act.

The result is that it is perfectly assinine for the service to complete its own machinery. The goal of this work is to develop a State organization that will have the machinery to carry out the prevention of disease from a Federal as well as State standpoint in this country. That involves developing in every State health organization a real active division of communicable disease control. Now, having that object in mind, the Public Health Service made a start last year in detailing to the States epidemiologic aids. We hoped for 40 of these; we got 8, due to the demands for the personnel in other divisions. These men were men who had been through the extra-cantonment campaign. Any man who went through that had as much training and experience as in 10 years under ordinary conditions. They were brought into Washington and given an extra intensive course in communicable disease control, and then sent out to 8 different States, and their experiences are interesting and enlightening. In some States, two States particularly, I will not mention them by name, they already had morbidity statistics in such shape that they could be compiled for a period of 10 years. The obvious epidemics were eliminated and an endemic index for each health unit in that State for each month in the year was obtained. It is set down, and now, as the morbidity reports come in weekly or monthly, they can check them against the index and know immediately whether they have more than they ought to have for that disease in that community in that month of the year. In other States they have practically no morbidity reports whatever. They have patchy reporting of mortality, and the best you can get in the way of endemic index is a conjecture or a guess, and then, when you have this, you have nothing to check up against. I am not painting a blue picture, because I am a born optimist. I want you to know the fact; I want you to get out of the position of smug complacency and have adequate communicable disease control. I hope we shall be able to establish in time a morbidity area at least as large as the area is now for deaths, and until we do that we can not say we have any basis for decent, proper communicable disease control.

I hope the United States Public Health Service will be fortunate enough to have the personnel available to place in every State of the Union a man whose business it will be to assist the State health officer to improve the condition of communicable disease control. There is not a State in which he would not be useful in that capacity, and some States need two or three men. This is in direct accord with the policy to build up sanitary engineering departments for the control of water supplies in States which I spoke of yesterday. The two are really part of one problem. I hope I will not be misunderstood in putting such stress on communicable disease control that one would think I am blind to the other important problems, especially child hygiene, but I do want to stress this for the reason that we have not been getting anywhere near communicable disease control.

Dr. JEPSON. I have served for 11 years as health officer in a city of 40,000 people and for 7 years as a State health officer. As a result of that somewhat long experience, I want to state that outbreaks of disease are largely due to three causes, all of which can easily be obviated: One, failure to make report in cases of communicable diseases; two, delay in reporting such cases; and three, errors in diagnosis. The last point may be best illustrated by referring to smallpox and a recent experience. In the mild form of smallpox with which we have been acquainted in the last 20 years there are numerous errors in diagnosis, the cases usually being taken for varicella by even the intelligent physician. Within a week there were reported to my office seven or eight cases of an eruptive disease which the health officer called smallpox but which a physician, older in

practice than he and much longer in that town than he, said was not smallpox. I sent our epidemiologist to investigate, and he found that the first case was in an adult, and the mistake of pronouncing it chicken pox was absolutely inexcusable. That patient has been allowed to go about the town without any control whatever, and seven or eight cases resulted in that failure in diagnosis.

As a local health officer, I have had reports of smallpox made to me on the fouth or fifth day of the eruption. This was inexcusable and I consider it disgraceful to any physician. We have often, unfortunately generally, throughout the country failed to receive reports of these acute infectious cases at all, some physicians positively refusing to report and others failing through neglect. I have a thought to throw out in this connection, which might obviate all these errors, if it could be put into universal practice, and that is that every physician, first of all, should be taught, and every parent, secondly, should be taught promptly to isolate every case of acute febrile disease, especially in a child, until a diagnosis can positively be made. Why should you, in acute cases, whether eruptive or otherwise, permit a child or other person to continue in contact with other members of the family when that case may develop into smallpox or scarlet fever or diphtheria, or other disease with fatal termination? If every mother were instructed to strictly isolate her child, that danger would be obviated. If the careless, indifferent doctor should come in later, he would find the mother wiser than he. I hope that you will try to instruct the physician coming within your observation to warn parents of the danger of exposing the sick to the well, and finally to have them educated to isolate promptly every acute febrile case.

Dr. Schereschewsky. Owing to the fact that we have a long program, talks will be limited to two minutes.

Dr. Carey. In Massachusetts we have had this system which Dr. McLaughlin speaks of in force for some time. We believe, however, that a more accurate index is one which we call the median endemic index. The reason for this belief is that in using the usual endemic index one excludes all epidemics and substitutes for these exclusions a figure that is believed to more accurately represent the proper index for the period. Our median endemic index is arrived at by arranging the reported incidence in arithmetical sequence and choosing the median figure. This does not necessitate exclusion or substitution, and it is surprising how often the reported incidence of the more usual communicable diseases will coincide with our index. In a mild infection such as we are now experiencing with measles and scarlet fever, this approximation does not hold, merely because of the large number of unreported cases by householders who, because of the high cost of medical attention, do not call in a physician. The

cure for this condition is, of course, to educate the householder to report the cases as they occur in his family.

There is one thing to which I would like to call your attention. I do not know that you men of the service realize the help and assistance that your weekly report is to us men in the various States. Because of its value we are very desirous of its being brought up to date. There is delay in publishing these weekly reports, and I find, taking that period when they ought to occur as at least 10 days after the current week, that in 13 States the report was two weeks late; in 44 States, three weeks; there were 144 reports, four weeks; 4, five weeks; 59, seven weeks; 1, eight weeks; 2, ten weeks. A report that is so delayed is of little value to us save as a matter of record. It would seem as though the service might adopt the same regulations that your sister bureau, the Census Bureau, has and not publish the report unless it is in on time.

Dr. Dowling. I am sorry to say we plead guilty to the charge of Dr. McLaughlin. If anyone can suggest how we can get the doctors to report promptly, we would appreciate it very much. Dr. McLaughlin sent us an epidemiological aid, but he was not permitted to stay. If he could have continued in the work I believe we would have made great progress. Like the gentleman from West Virginia, in my opinion, if there is doubt, chicken pox should be reported as smallpox and so treated until diagnosis is determined. Louisiana has been charged with a number of deaths from smallpox. We make the frank admission, though we realize it is a disgrace to our intelligence. We are not able to get our births reported, barely able to get reports of deaths, and, unless we have better cooperation from the doctors, as well as the people, I don't know how we can accomplish more. At present we can not get grand juries to indict or our courts to prosecute. We furnished evidence against a prominent physician, and they replied, "He is such a prominent physician, we can not afford to prosecute him." We furnished later a report on another physician. The statement came back that he was the "judge's cousin," and for that reason they couldn't prosecute him.

Dr. Schereschewsky. Any further discussion? The next subject is, "Better Morbidity Reports."

BETTER MORBIDITY REPORTS.

(Dr. Warren submitted the following report:)

It is not necessary for me to go into the importance of better morbidity reports. I want to state that we now have 32 States with collaborating epidemiologists. There is no reason why every State in the Union can not avail itself of the system of collaborating and assistant collaborating epidemiologists, with the advantage of saving itself some postage. I am sorry to see that the Post Office Department has ruled against sending laboratory specimens by mail under penalty. They said that it was impossible, that this subject had been brought up numerous times with them by the Agri-

cultural Department in regard to samples of soil sent in that way, and on all occasions they had ruled against it.

With a view to obtaining better reports, Congress was asked for $100,000 to put in each of the 31 States that were then reporting a statistical clerk who would aid the States in getting such reports as the Public Health Service wanted, but, owing to the fact that Congress for this year was cutting down in expenditures, they did not grant this increase; but I feel sure, in time, when the Treasury gets in better shape, we will be able to furnish a statistical clerk to States cooperating in this regard with the Public Health Service.

There has been some criticism of the Public Health Reports because they contain morbidity reports which are out of date and of no immediate use to the health officers. The Public Health Service feels under obligation to publish all official morbidity reports received even though they be too late for immediate use by health officers. Such reports may be of use for statistical purposes at later dates, and, further, may furnish a comparative basis for improvement of these reports.

It is desired to invite the attention of the State and local health authorities to the weekly telegraphic reports as published. It is desired that these weekly telegraphic reports reach the bureau on Monday or Tuesday of each week and contain the report of the previous week ending on Saturday. These telegraphic reports should cover in detail any unusual condition. They should not summarize morbidity reports by counties nor by cities unless some unusual condition exists in the county or city in the State.

The Public Health Reports contain each week's morbidity reports as received from cities of 10,000 population or more. There are 709 cities in the United States in that class. The service has been receiving fairly good reports from about one-half of these cities. I believe 535 cities make some kind of report. I wish to be clearly understood that the Public Health Service desires in all cases to make contact with local and municipal health authorities in the collection of morbidity reports through the State health officers, but the method of collecting from the cities such reports as published in the Public Health Reports was instituted years ago, and until a State can furnish from those cities better reports than those now obtained it is desired to continue the present method. It is realized that this method is not in line with the general policy of the service, but it is of great advantage to continue it until some better method is forthcoming.

I would like to have some discussion as to what State health officers think of the plan for a weekly telegraphic report from, say, 100 cities in the United States scattered geographically so as to obtain a fair index as to what is occurring as to unusual conditions. Such reports would have to be received on Monday morning for the week ending on the previous Saturday. These reports would be summarized and mimeographed, then telegraphed to the States and given out to the press. To obtain these reports it would be necessary for the 100 cities selected to report direct to the bureau by teleraph and not to the State health authorities. However, it will be necessary to obtain an appropriation for this purpose before such plan can be instituted.

There has been some criticism as to the delay in receiving the Public Health Reports each week. This delay has been, for the most part, due to the crowded conditions in the Government Printing Office. Great efforts have been made to avoid this delay by the bureau and these efforts will continue.

TEETH AND MOUTH INFECTION.

Maj. L. G. Mitchell. I will not take the time to express my pleasure in addressing you. After the "measles and mumps" epidemic in our camps, 1917–18, the Surgeon General's Office recognized

more than ever the close relation existing between infection in bad mouths and systemic diseases. The heavy death rate from these diseases was unusual. A partial survey disclosed mouth infection in every case examined. The film "Come Clean" was made at the Army Medical Museum, for the purpose of teaching the soldiers the importance of keeping their teeth clean and having their mouths freed from all infection. In making the film I incorporated features of interest to the general public, so it would be of value after the war. It is attracting considerable attention from the professions as well as from the public for it shows how infection from bad teeth reaches the various organs of the body, also the importance of the deciduous teeth and the causes of malocclusion which results in much of our malnutrition among children; matters which our medical men should be in close touch with. Foreseeing possible criticism from some, I asked Col. Frank Billings to direct the more scientific part of the picture, wherein we trace the infection from the mouth to various parts of the body; also to write the titles. The picture starts with an interesting story of camp life. The hero is ridiculed for brushing his teeth and when they hide his brush a fight ensues. He then tells his story. From this we go into the subject of oral hygiene in a constructive way. The Surgeon General expressed his approval by allowing 30 copies to be made, 23 copies being circulated by the Department of the Interior.

This film expresses the opinion of many of the country's leading surgeons, pathologists, and research men. All who are interested in health conservation, in the prevention of communicable diseases, and in the health of our children should get in closer touch with these important matters for they are fundamental. The masses of people no longer die from great plagues, but from a simple infection the focus of which would give no trouble. Let us work together to keep the blood free from the disease-producing bacteria.

TRACHOMA.

The SURGEON GENERAL. The next subject is trachoma and Dr. McMullen is the father of trachoma.

Dr. MCMULLEN made the following report:

In view of the fact that the Surgeon General has introduced me as the father of trachoma, I will omit any reference to the ancient origin of this disease. Since trachoma is not the direct cause of death, there are no mortality statistics to emphasize the importance of this dangerous communicable disease to the public health officer, but it presents a problem more largely economic than any other in the whole field of preventive medicine. As is often the case in smallpox, the disease is classed as some benign condition until it has attacked large numbers of people with damaging effects to their eyes. As Drs. Dowling and Jepson have said about smallpox, it is easy to get an opinion that it "isn't" in most cases.

The incubation period of trachoma has not yet been determined with any accuracy, but it appears to be prolonged over a considerable period. What the health officer wants to know is some practical standard by which he can readily recognize a condition of the eyelids which should not be permitted in schools or other meetings, as a protection to the public health. He is not so much concerned with hairsplitting diagnosis which postpones any preventive measures until some damage has occurred. It appears that there is no such thing as an agreement upon the diagnosis of trachoma in which everyone would concur. This was demonstrated at the New Orleans meeting of the American Medical Association last April, as those of you who were present will no doubt agree.

Those of us who have had to deal practically with trachoma realize that it is a serious menace. Trachoma surveys were made originally in Kentucky about 8 years ago when trachoma prevention work was commenced. Since then surveys have been made in Tennessee, West Virginia, Virginia, Florida, Texas, Arkansas, Missouri, and other States. In speaking of smallpox, Dr. Dowling suggests that the suspicious cases be acted on as positive cases and excluded from gatherings. This is an excellent and practical rule and one which should be applied to trachoma and allied conditions regardless of the ever-present fellow who was born in the objective case. Follicular conjunctivitis or folliculosis could and should in this way be excluded. This condition is easily curable and could than be returned to school with little loss of school time. This course is pursued in the Philadelphia schools.

Health officers are continually embarrassed with conflicting diagnoses of trachoma and it would be well if the Surgeon General could name a committee consisting of some of the prominent ophthalmologists of the country to work in cooperation with the service in the hope of standardizing the diagnosis.

Perhaps the health officers who have experienced difficulty in handling these eye cases will express themselves.

Dr. McCormack. I think trachoma is one of the most serious problems that confronts the health officer of Kentucky. I am perfectly confident that every health officer in the United States who is now confronted with trachoma has a morbidity problem, unless we get rid of the foci of the disease, particularly in certain districts. Dr. McMullen has treated very many of these cases. Our own rule in Kentucky is to exclude from school all cases of trachoma and all cases of follicular conjunctivitis, unless they can clearly be stated not to be trachoma. All of those cases ought to be treated, and I think this is probably the only practicable standard that can be adopted. All the cases, the treatment of which is a simple cautery, ought to be precluded from school. They can be gotten back in school, but not any quicker, if there are no defects. They can all be relieved immediately and, if the ones who have follicular conjunctivitis are treated, there is no harm done to anyone. I believe it is of the utmost importance that a board of experts be constituted by this service that will clearly establish on definite and scientific lines, after a study of the question, the differentiation in diagnosis of trachoma. The men on the board should bring in the constructive verdict on the problem involved and secure the support of the ophthalmology profession, so that we can help to get rid of this tremendous disease.

There are thousands of children in this country who are doomed to inefficiency and a large number to eventual blindness. It is not a matter for academic discussion, or that we have a right to dally with. It is a tremendous problem that involves large numbers of our children. I can not permit an opportunity to pass without paying a personal tribute to Dr. McMullen on his work. Coming into Kentucky as he did, walking or riding on a horse over roadless country, going into homes and schools where the blind led the blind, finding the enormity of the problem, working hard in a hard country in a hard way for a solution of it, and finding a method of relief. It does not make any difference how many doubting Thomases there are, or how slowly it is adopted, it must be adopted by every intelligent man everywhere by members of the profession every where. I want to say there is no other distinction that this service has attained in all the years of its history which entitles it to more credit and more glory than the unassuming work that was done by John McMullen in the mountains of Kentucky.

Dr. DOWLING. I merely want to indorse what the previous speakers have said. When Dr. McMullen read his paper before the medical conference in New Orleans last October I took occasion to ask a few of the doctors doing special work how many cases they had treated during the last 12 months, and it was surprising to get their reports. The regulation of the State board of health requires that all cases be reported. The city boards of health do not require it. When I was doing eye, ear, nose, and throat work I saw an average of 20 to 30 cases a year. It appeared that frequently doctors were in doubt relative to the diagnosis of eye trouble as trachoma and almost invariably gave the patient the benefit of the doubt.

Dr. MCDONELL. I would like to second the suggestion that a commission be appointed to study and outline and diagnose the length of time that these children be excluded. Dr. McMullen made us a visit in Jacksonville a few years ago and he went over with the different eye men in the city 25 or 30 cases we suspected of being trachoma. Following this visit all of the eye men called this condition trachoma except one man. Since that time some of them are beginning to weaken, and it is throwing a good deal of responsibility on me as to the length of time to keep these children out of school. That is what a health officer wants to dodge in a city.

PROVISIONS FOR LEPERS.

Dr. McCoy made the following report:

I assume that I am expected to talk on leprosy, and am sure the first thing you will want to hear something about is the Federal leprosarium. There have been heartbreaking delays in connection with the establishment of this institution, but if any of you have ever tried to place a flourishing colony of about 300 lepers in your

own community, or in one adjacent to that in which you live, you will understand the difficulties which have confronted the board appointed by the Surgeon General to select a site for the National Home for Lepers. I hope that in a very short time the final decision will be made and the Government will be in a position to take care of the lepers of the country.

We have recently been much interested in a new method of treatment used by Drs. McDonald and Dean in Honolulu which appears to be proving satisfactory. These gentlemen use hypodermically the ethyl esters of the acids found in chaulmoogra oil; this is a modification of the treatment which Dr. Heiser resurrected and applied extensively in the Philippines some five or six years ago. A report of the work is in press at the present time and details will be available in the relatively near future.

Recently we have been interested in the distribution of lepers in the United States with respect to the locality of infection, and the data at my disposal indicates that leprosy is not communicable in our northern communities. I am most anxious to have any information which any of you may have on this point.

Dr. TROTTER. I would like to say a few words about leprosy. The establishment of a Federal leprosarium is being vigorously opposed by everybody. You are probably aware that we have a receiving leper station on the outskirts of Honolulu. The people pay no more attention to this hospital than you would to a general hospital. We have 99 cases on hand there now, the oldest 62, the youngest 7, the average age being 23. We are administering to all these people the new remedy for leprosy, which is being made in the College of Hawaii by Dr. E. L. Dean, and is administered by Acting Asst. Surg. J. T. McDonald, of the United States Public Health Service. Dr. Dean does not state positively that the present method of treatment is a sure cure for leprosy, but the results so far attained have been most encouraging and warrant the belief that a most important advance has been made in the treatment of this disease. As a result of the treatment given during the past year, 48 patients were paroled and to date none of these have returned to the hospital. The missionary work done by these paroled patients has been wonderful. We are now admitting patients, who have come voluntarily to the Kalihi Hospital for treatment, the disease in any case not having existed for longer than six months. The board of health has the confidence of the people, and this alone is the most encouraging aspect of the leprosy situation in Hawaii. In previous years the Hawaiians suffering from leprosy would be hidden away, possibly for five or more years, until the patient became practically helpless, when he would be brought in and surrendered to the board. This condition no longer exists. Patients suffering from leprosy are coming in, waiving an examination by a board of physicians, and willingly accepting the decision of the attending physician as to whether or not they are lepers. The board of health expects to hold a parole board in July, and at that time it is expected that many patients will be released from the hospital on parole.

Dr. McCORMACK. In Panama, in the absence of Dr. Grubbs, who is doing exactly the same work in Panama for the service, the receiving station is in the hospital. All the patients are brought there and examined. They feel no anxiety about the disease. In addition to indorsing the recent modification of Dr. Heiser's treatment, I want to indorse especially the social relation in the care of the patients. Due to Dr. Grubbs, it has more than doubled the population as it has in Hawaii, and the people are sending their cases in very much earlier, which makes the treatment more hopeful. I hope this idea will be taken into consideration. These people are not treated as criminals, or as hopeless cases, but given every sort of humanitarian attention. They are not put in an institution, but given little cottages where they can be cared for humanely. It is of the utmost importance that they come and stay throughout the treatment. Dr. Grubbs more than doubled the population.

The SURGEON GENERAL. Before going to the next subject, Dr. Creel, chief of the quarantine division, wants to make a statement which is not strictly on the program, but one in which we feel that State health officers have a deep interest, both from a sentimental and from a health standpoint, and that is with the return of the soldiers' bodies from France.

RETURNING BODIES OF SOLDIERS FROM FRANCE.

Dr. CREEL. On several occasions inquiry has been made of the bureau as to the propriety and safety of permitting public funerals; more especially the opening of the caskets and exposing the bodies of the returned soldier dead. The attitude of the bureau on this subject is probably the attitude of most practical public health officials with respect to the disinterment of the body that had been embalmed or otherwise treated and disinfected. It was deemed to be of no danger from a public health standpoint—certainly no danger from a public funeral and probably not from the opening of the casket, and this was the response that the bureau made to such inquiries.

More recently, however, Dr. St. Clair Drake took up the matter with the War Department, and in reply he received from the Quartermaster General the following message which sets forth the attitude of the War Department:

Reference your telegram May 6 to Secretary of War. No authority this office prescribe regulations for handling of soldier dead by relatives or other persons after delivery of body in the different States. This a matter for State regulation. Thought most States treat disinterred bodies as infectious and dangerous to public health and surround the handling of such bodies with most rigid health precautions. We are conforming to stringent mortuary regulations of European countries as to technique of disinterments and preparation for shipment. All bodies carefully and thoroughly treated with disinfectants and deodorants by American embalmers in Europe and placed in hermetically sealed caskets specially designed for this work, each casket

rigidly tested prior to use and carefully scrutinized after receipt with body in United States and if body is left undisturbed in its sealed metallic lined casket presents no source of danger to the community. Agree with you that uniform regulations all States highly desirable. Viewing remains accomplishes no useful purpose, as identification is clearly established before permit is issued for body to be returned to relatives. A gruesome spectacle at best and unless guarded by most rigid regulations may prove a source of danger to the community notwithstanding elaborate sanitary precautions taken by disinterring embalmers.

When inquiry was first made of the bureau on this subject the cemeterial division of the War Department was telephoned to and asked as to what precautions would be taken on the other side. They stated that all bodies had been embalmed or otherwise appropriately prepared for return, thus giving the bureau the impression that they were all bodies that had been buried a long time. As a result of this telegram from Dr. St. Clair Drake, the Secretary of War requested the Surgeon General of the Army to confer with the Surgeon General of the Public Health Service on this subject, because the War Department, as evidenced by the telegram from the Quartermaster General, was opposed to public funerals. At the conference with the officers of the cemeterial division, the bureau representative pointed out that from a public health viewpoint there was no danger in opening the casket of a body that had been disinterred after prolonged burial. An Army officer stated that a number of these soldiers had died from influenza and had been recently buried. This, of course, might make a difference. There seems to be no special good accomplished by opening the casket. It is a gruesome spectacle, and despite the recognition of the fact that there is no very great danger, nevertheless, it is believed that there should be some uniform practice against public funerals, or rather against opening the caskets of soldier remains disinterred in Europe and brought back to the United States for reburial.

Dr. Drake. Just prior to sending these telegrams to the Surgeon General of the Army and the Surgeon General of the United States Public Health Service the State Department of Health of Illinois was besieged from all quarters of Illinois as to what ruling would prevail affecting the handling of the bodies of returned soldiers. In the absence of any instruction I wired the Surgeon General of the Army and the Surgeon General of the United States Public Health Service that some ruling and uniformity of action appeared to be desirable. Great pressure was brought to bear upon the State authorities to permit opening the caskets and to hold public funerals. Our judgment was that there would be no great danger in opening the caskets. In ruling that way our action was in accordance with the recommendation of the Surgeon General of the United States Public Health Service. We did urgently advise against opening the caskets, but if they were opened it was required that they be

opened only in the presence of one member of or some person selected by the family. Our ruling appears to work to the satisfaction of all.

The SURGEON GENERAL. I think that is an excellent suggestion. I think there should be some rule which would stop people from having the caskets opened.

MIGRATION OF TUBERCULOUS PERSONS.

Surg. Smith made the following report:

Migration of tuberculous subjects is still a problem. The causes are various and some of them can be removed by concerted and persistent efforts. When the average family doctor finds a case of tuberculosis his first instinct is to send the patient away to some other place. There are several reasons for this. The general practitioner is not skilled in the treatment of tuberculosis nor is he interested in it. He has been taught, unfortunately, to send all his tuberculous patients to a specialist in tuberculosis, in a special institution and a special climate. He believes that the patient expects this advice as soon as the diagnosis is announced. The physician continues to give this advice regardless of the fact that there are not enough special institutions or specialists in the world, and never will be, to receive and treat more than a small fraction of the tuberculous needing care. As a result, diagnoses are delayed or withheld by the doctor, symptoms are concealed by the patient and later, like a wounded wild creature, the hapless patient hides himself, concealing his disease among the marts of industry and trade. Tuberculous patients are far too numerous to relegate exclusively to specialists. They constitute approximately one-third of male patients needing hospital care. Moreover, in the hands of skilled physicians the home treatment of tuberculosis is highly successful.

We need better undergraduate teaching in medical schools and a chair of tuberculosis in every medical college. We need provision for a limited number of tuberculous patients in every general hospital in the country for the proper training of personnel and for the proper preliminary training of the patients themselves preparatory to beginning home treatment under a family doctor in sympathy with the plan and wise in all the methods of treatment. Such a plan would popularize treatment in the home climate and do much to counteract the pernicious advice which has been routine for 20 years by which patients are urged to seek a change of climate.

The policy of opening general hospitals to tubeculous patients was advocated by the National Tuberculosis Association at its annual meeting in 1916. The Surgeon General of the Public Health Service advocated the adoption of such a policy in a telegram to the American Medical Association at its annual meeting in 1920. There is no doubt that in this single measure, so easy to accomplish, so pregnant with possibilities of good, is to be found one of the most important means to further the training of practitioners of medicine in this important subject, to set the stamp of scientific approval upon the practice of retaining tuberculous patients in the home climate, to counteract the absurd fear of tuberculosis common among the laity, to insure earlier diagnosis, and to encourage the hospitalization of patients who otherwise would certainly be deprived of it. It is to be earnestly hoped that every exponent of measures to improve the public health will voice an approval wherever opportunity arises of this important measure.

REPORT OF COMMITTEE ON RESOLUTIONS.

Dr. DRAKE. Mr. Chairman, your resolutions committee has received but four resolutions. All have been carefully considered and reported back to the conference with the recommendation that they be adopted. The first is as follows:

Resolved, That any laws concerning the sanitation of public conveyances and public railway stations should contain a clause penalizing the public for befouling such conveyances and such stations, for we recognize that unclean and befouled public conveyances and stations are made so by dirty people and they should be penalized for their filth.

The resolution was adopted.

Dr. DRAKE. The second resolution is one prepared by the committee at the suggestion of the conference. It reads as follows:

Whereas there has been introduced in Congress a bill (H. R. 10925, S. 3259, known as the Sheppard-Towner bill) making provision for promoting the care of maternity and infancy in the several States; and

Whereas there has been created in this bill new Federal and State health agencies known as "A Federal Board of Maternal and Infant Hygiene" and "State Boards of Maternal and Infant Hygiene;" and

Whereas the establishment of new or competing health organizations, Federal or State, weakens the efforts of the existing legally constituted health agencies: Therefore be it

Resolved, That it is the sense of the Eighteenth Annual Conference of the State and Territorial Health Authorities with the United States Public Health Service that the objects of the Sheppard-Towner bill for the public protection of infant and maternal life be strongly indorsed; and be it further

Resolved, That it is the sense of this conference that the Federal administration of this act should be under the supervision and control of the Public Health Service, and in States, of the State health authorities; and that the sections of said bill relating to administration be changed to accord with these suggestions; and be it further

Resolved, That this resolution be laid before the Committees on Education and Labor of the House and Senate by a special committee representing this conference.

Dr. MCCORMACK. I believe it would be very much more forcible if that resolution were laid before the State and provincial health authorities. I move it be transmitted to the State and provincial health boards, and that the conference approve it now.

The resolution was adopted.

Dr. DRAKE. The third resolution is one offered by Dr. Rankin:

Resolved, That it is the sense of the Eighteenth Annual Conference of the State and Territorial Health Authorities with the United States Public Health Service that the objects of the Fess-Capper bill for physical education should be strongly indorsed; and be it further

Resolved, That it is the sense of this conference that the Federal administration of the said bill as it relates to the sanitation of school buildings and grounds and the detection and treatment of physical and mental defects and diseases of school children should be under the direction of the United States Public Health Service; and be it further

Resolved, That section 13 of the said bill should be amended so as to leave to the legislative bodies of the States the designation of the State machinery through which the provisions of the bill shall be carried into effect within the States, and that subsequent sections of the said bill be amended to accord with the change in section 13; and be it further

Resolved, That this resolution be laid before the Committee on Education and Labor of the Senate and Committee on Labor in the House by a special committee representing this conference.

Dr. DRAKE. Resolution No. 4 was offered by the committee on rural sanitation.

Whereas (1) over 53 per cent of the population of the United States is rural and the food supply for our whole Nation is dependent upon production in the rural districts; and

Whereas (2) physical defectiveness and preventable diseases have been found by extensive, careful studies to be as prevalent in our rural as in our urban population and only about 3 per cent of our rural population is served by local whole-time health departments approaching adequacy; and

Whereas (3) the promotion of rural health work is obviously of local, State, and National importance and, as has been demonstrated, may be secured to the highest permanent advantage by cooperative activities of local, State, and National governmental health agencies; and

Whereas (4) for the Public Health Service to proceed in a businesslike way in effecting its cooperative arrangements with State and local governmental health agencies for the promotion of rural health work a continuing appropriation is necessary; and

Whereas (5) the application of the principle of Federal aid extension to rural health promotion appears entirely logical, consistent with the theory and established practices of our system of government, and is urgently needed at this time: Therefore, be it

Resolved, by the conference of State and territorial health officers with the Public Health Service, that the members of this conference, individually and collectively, indorse the principles of legislation contemplated by the Lever rural health bill, introduced in the Sixty-sixth Congress, and agree to advocate such principles with a view to bringing about a nation-wide popular demand upon the Congress of the United States for such legislation.

The resolution was adopted.

Dr. SCHERESCHEWSKY. Just one more subject to be discussed. After this subject the conference will be adjourned. The moving-picture machine is going to be moved back in here and the dental film of which Maj. Mitchell spoke will be shown a few minutes afterwards. The next subject is venereal-disease control by Dr. Pierce of the Public Health Service.

VENEREAL DISEASES.

(Dr. Pierce submitted the following report:)

Mr. CHAIRMAN, MEMBERS OF THE CONFERENCE: As it is quite late, I am not going to take up your time by going into details of venereal disease control work with which most of you are already familiar. Yesterday afternoon, last night, and to-day there have been special venereal disease conferences going on in another part of the building and at these conferences many details were discussed with the State venereal disease control officers. The most important matter to bring to your attention is in regard to the funds for carrying on the work in the States. The appropriation bill for the ensuing fiscal year will, no doubt, soon become a law and members of the committee have assured us of financial support for one more year on the same cooperative basis as has been in effect for the past two years. However, the amount appropriated for the year beginning July 1, 1920, will be approximately only 60 per cent of the amount which each State board of health received during the past year. It is very important for the success of the work to secure an appropriation of $1,000,000 for the fiscal year beginning July 1, 1921. In order to accomplish this purpose, two things will be

necessary. First, Members of Congress must be able to realize that the work is of extreme importance and must know that the people of their State want this work continued. It is therefore important that each State board of health interest every local community in this problem and see that local communities bear their share of the expense and conduct the work in such a manner as to demonstrate its necessity. Second, it is necessary that each State board of health organize the work of its bureau of venereal disease control so that the amount appropriated by Congress will be expended during the year for which the appropriation was made.

There is at the present time a balance of approximately $116,000 remaining unexpended from the appropriation allotted to the States during the fiscal year ending June 30, 1919. For the current fiscal year there is nearly $400,000 that has not yet been disbursed by the Interdepartmental Social Hygiene Board. If this amount can be wisely expended, it is certainly advisable to increase the work of the State bureaus to the limit permitted by the appropriation. When representatives of the Public Health Service and the Interdepartmental Social Hygiene Board appear before the Appropriation Committee next winter, they should be able to show that the money appropriated has been not only expended but expended wisely and has accomplished results that are susceptible of demonstration.

Another subject which calls for discussion at this time is the fact that some accounting system is necessary in connection with the allotment of funds to State boards of health. There are certain necessary restrictions placed upon every appropriation by the Federal Government which must be observed. The Interdepartmental Social Hygiene Board is making every effort to reduce to a minimum the formalities required by the accounting system of the Government. Some of you will say that the formalities even reduced to a minimum are still quite considerable, but it must be borne in mind that there are certain laws, regulations, and comptroller's decisions by which all governmental agencies must be governed. A careful effort to observe the suggestions given by the Interdepartmental Social Hygiene Board will facilitate the work of accounting and reduce the amount of correspondence required to correct technical errors in vouchers submitted for payment.

The Division of Venereal Diseases is following the procedure outlined in the act creating the division—that is, to cooperate with State boards of health in venereal disease control work. One of the ways the division is helping State health officers and State venereal disease control officers is through furnishing monthly abstracts of literature relating to venereal disease control. Approximately 230 medical journals, reports from State departments of health, and other public documents are read each month by representatives of the division and the data of interest to those engaged in venereal disease control work is abstracted and tabulated. These abstracts are available to anyone desiring them, so long as the supply lasts.

I had intended presenting a paper to the conference on the value of statistical data that can be collected by each State bureau of venereal disease control. The paper, however, will not be read nor even a synopsis given except to emphasize a phase of the work which was discussed at the conference last night. On that occasion Dr. H. G. Irvine stated that it was the duty of all venereal disease control officers and others interested in this subject to utilize the opportunities presented from day to day of obtaining a record of as complete data as possible with regard to venereal infections. All of us must realize that until the present time one of the handicaps of the work has been the lack of reliable data. We have, for instance, but little data to show actually the percentage of infection of gonorrhea and syphilis, distributed as to sex, color, and occupation.

At the present time there are being treated in venereal disease clinics throughout the United States hundreds of thousands of cases of venereal infections each year. Within two or three years by giving close attention to this subject there could be collected detailed data in relation to all phases of venereal diseases on approximately

1,000,000 cases if clinic records were only kept and tabulated in such a manner that they could be studied. At the present time we, no doubt, waste much energy in the educational work for preventing venereal infections through lack of definite information which would enable us to focus our attention upon that part of the population most highly susceptible to venereal disease infection rather than proceeding, as at present we must proceed, by scattering our efforts broadcast. There is no way in which accurate data can be obtained except through the present venereal disease control organizations of the State boards of health.

I hope that when the venereal disease control officers return to their respective States they will bear in mind that aside from carrying on a generalized program they will impress upon the clinicians, nurses, and clerks in each venereal disease clinic their responsibility for the tabulation of data obtained in the clinic. Careful attention to this subject would soon result in a great mass of statistical material which could be studied and as the result of authentic information, our efforts could be concentrated, thereby promoting efficiency in the campaign for venereal disease control.

Dr. CREEL. On several occasions the bureau has been very strongly urged to amend the United States quarantine regulations so as to make venereal diseases quarantinable and thus prevent their admission into the ports of the United States, and these recommendations included one for the visual inspection of genitalia. Ordinarily this would seem so impracticable as to hardly merit discussion, but the spirit of these crusaders against venereal disease is such that they do not admit that there is anything impracticable or impossible in the way of preventing the spread of venereal infection, and so you have to tell them why.

One of the suggestions made was that the regulations be applied to the entire personnel of the vessel, passengers and crew alike. Another suggestion was that the examination should apply only to the crew. Another, that the quarantine officer be given discretionary powers to examine those he might think were suspicious. The first proposition sounds radical. It is radical, but, as a matter of fact, it is perfectly consistent from a public health standpoint, since there is no reason to assume that the crew is exclusively affected with venereal disease and the passengers are not. Furthermore, the United States statutes provide that quarantine regulations shall be administered uniformly, and that is another objection to making any measure apply only to the crew. As to giving the quarantine officer discretionary powers, I think it is unjustifiable that an individual official should be obliged to exercise the part of censor.

From a legal standpoint, there is no obstacle to making venereal diseases quarantinable, since the United States quarantine laws give the Secretary of the Treasury power for providing regulations to prevent the introduction of any infectious or contagious disease, without any reservations whatsoever. It seems to me, however, that there are many grave administrative objections against including venereal diseases in the maritime quarantine regulations. No matter how expeditiously the practice may be carried out, it is bound to

result in an enormous economic loss. The demurrage on transoceanic cargo carriers averages about $1 per ton per day and the majority of oversea carriers exceed 5,000 tons and are worth $5,000 per day; a great many of them exceed 10,000 tons and some of them 20,000 tons; so that, for every hour the ship is held up, there is considerable financial loss.

It has always been the policy of the Public Health Service to enforce powers of a discretionary nature only when there was some promise of advantage to be gained commensurate with the loss sustained by the enforcement of the regulation, and I believe that this principle should apply to any administrative procedure of a sanitary nature. For this reason, the United States quarantine regulations at present include only plague, yellow fever, typhus, cholera, and smallpox, for the reason that the first four are exotic diseases and, if introduced, would tend to become epidemic. In respect to smallpox, a number of types of this disease are very virulent and extraordinary measures are perfectly defensible. It would be difficult to defend a maritime quarantine against measles and the practice of holding up a ship for days at a time because of measles on board, when possibly there would be already existing in the port a number of cases of measles. The same principle applies to a great many other communicable diseases already existent in the United States and more or less endemic in the larger cities.

Aside from enforcing rigid quarantine against venereal disease, certain restrictive measures are already in effect. Under the immigration regulations, all aliens are subject to medical examination, and those that are found infected with venereal diseases are prohibited admission. The quarantine regulations provide that those communicable diseases that are not quarantinable shall, nevertheless, be reported to the local health officer, so that he may handle the case in the same manner as local infections of the same nature. This paragraph of the quarantine regulations requires that State health officers or other authorities shall be notified of any of the communicable, but not quarantinable, diseases sufficiently early to permit him to take action before the case is discharged from the vessel. In view of this, therefore, and considering the results that might be accomplished, it seems hardly justifiable to make venereal diseases quarantinable in the same way as cholera and typhus. There is a very prevalent opinion that sailors, as a class, are infected with venereal diseases. That was my opinion for a great many years, though I had never seen any reliable statistics on the subject. In the marine hospitals or in seamen's wards, it is true that a majority of the cases may be venereal, but this seems reasonable, since the sailor is generally a robust, healthy man, spending three-fourths of his time on the seas, not exposed to the ordinary communicable diseases to the extent

that the landsman is, and by reason of his vocation is but little subject to organic lesions or degenerative diseases.

In order to form some estimate as to the prevalence of venereal diseases amongst seamen, the quarantine officer at San Francisco was requested to make a survey of a series of sailors on arriving vessels, and the chief medical officer at New York (Ellis Island) was given like instructions. Of a series of 2,000 cases examined at the quarantine station at San Francisco (including visual inspection of genitalia and preparation of slides) slightly over 2 per cent were found infected with gonorrhea or syphilis or chancroid. In New York Harbor, in a series of 6,000 cases given special examination, the percentage of venereal infection approximated 3 per cent. I do not doubt that there were a number of cases that got by, simply from the very fact that there are a number of difficulties that can not be overcome in making quick diagnoses; but, at the same time, these were the percentages and these figures would obtain if quarantine inspection were instituted in all cases for the detection of venereal diseases. The results would not be very satisfactory. It would seriously interfere with the movement of commerce, and, at the same time, would only prevent the addition of 1 or 2 per cent to the already existing venereal cases in the port. I think we can depend on the present regulations applicable to the medical examination of aliens to accomplish a great deal. Aside from this practice and the carrying out of the provisions of the quarantine regulations looking to the notification of local health officers, I think that more drastic regulations would hardly be justifiable.

In New York City the Public Health Service, in cooperation with the American Red Cross, has established an agency called the Seamen's Service Center, which, as its name indicates, is to render service to seamen. There is a growing sentiment in the United States for stimulating the growth of the American merchant marine. American ships must be manned, preferably by Americans. Anything that can be done to promote the welfare of the seamen is adding to national prosperity. At the Seamen's Service Center real help is given to seamen when ashore. They are not only sent to clinics but are furnished any assistance or advice that they may require. Temporary jobs are found for them, so that they may remain ashore and be treated, if necessary, and they are made to feel that they are not benificiaries of a social welfare organization, but are receiving only the advice and assistance to which they are entitled by virtue of their representing the United States. The work of the Seamen's Service Center is a plan worthy of imitation at all the other ports of the United States, and the development of this work will certainly have an important bearing on the personnel of the American merchant marine.

Surg. Gen. CUMMING. We have cleaned the slate. Dr. Scherechewsky will take three minutes in which to speak about the initiation of a Nation-wide public health campaign.

FUTURE PLANS.

Dr. SCHERECHEWSKY. Gentlemen, we all want to get together and we want to improve the machinery for protecting the public health in the United States. How are we going to do it? One definite and concrete thing which we think might be done is this: We want to get together some day in the future all the persons in Washington who have to do with public health. Then we want to go before Congress and before our respective State legislators and get some action throughout the country. What do you think of the proposition? We are going to have the presidential election this fall. Most of the State legislators are going to meet in January. The new Congress will have the budget system. The circumstances will be favorable for us to get together and do something big. If you feel that the Public Health Service should take the lead in bringing the big convention here some time in September or October, we will work out a definite program by which we shall go ahead for our State, Federal, and local governments. What do you think of it?

Dr. WELCH. I move to have a conference in November and indorse the proposition made by Dr. Scherechewsky.

Dr. MCCORMACK. We are about to adjourn. I move you that this conference extend a vote of thanks to the Surgeon General and all who have contributed so greatly to the success of this conference and that we pledge them our loyal and undivided support and to do everything in our power to lessen the sickness and the death rate in our respective States.

(Unanimously carried.)

Dr. CUMMING. For the officers of the Public Health Service and myself I want to express my sincere appreciation both for the vote and cooperation we have had. I have drawn a great deal of inspiration from this meeting and I only wish we were going to meet oftener. It would do me a great deal of good. I declare the meeting of the conference at an end.

STATE AND TERRITORIAL EXECUTIVE HEALTH OFFICERS.

Alabama.—Dr. S. W. Welch, State health officer, Montgomery.
Alaska.—Dr. L. O. Sloane, commissioner of health, Juneau.
Arizona.—Dr. George E. Goodrich, State superintendent of public health, Phoenix.
Arkansas.—Dr. C. W. Garrison, State health officer, Little Rock.
California.—Dr. Irving R. Bancroft, secretary State board of health, Sacramento.

Colorado.—Dr. R. L. Drinkwater, secretary State board of health, Denver.
Connecticut.—Dr. John T. Black, commissioner of health, Hartford.
Delaware.—Dr. L. S. Conwell, secretary State board of health, Dover.
District of Columbia.—Dr. William C. Fowler, health officer, Washington.
Florida.—Dr. Ralph N. Greene, State health officer, Jacksonville.
Georgia.—Dr. T. F. Abercrombie, commissioner of health, Atlanta.
Hawaii.—Dr. F. E. Trotter, president board of health, Honolulu.
Idaho.—Mr. P. L. Neil, commissioner department of public welfare, Boise.
Illinois.—Dr. C. St. Clair Drake, director of public health, Springfield.
Indiana.—Dr. J. N. Hurty, State health commissioner, Indianapolis.
Iowa.—Dr. Guilford H. Sumner, State health commissioner, Des Moines.
Kansas.—Dr. S. J. Crumbine, secretary State board of health, Topeka.
Kentucky.—Dr. A. T. McCormack, State health officer, Louisville.
Louisiana.—Dr. Oscar Dowling, president State board of health, New Orleans.
Maine.—Dr. Leverett D. Briston, State commissioner of health, Augusta.
Maryland.—Dr. John S. Fulton, State health officer, Baltimore.
Massachusetts.—Dr. Eugene R. Kelley, State commissioner of health, Boston.
Michigan.—Dr. Richard M. Olin, State health commissioner, Lansing.
Minnesota.—Dr. Charles E. Smith, jr., secretary State board of health, St. Paul.
Mississippi.—Dr. W. S. Leathers, secretary State board of health, Jackson.
Missouri.—Dr. George H. Jones, secretary State board of health, Jefferson City.
Montana.—Dr. W. F. Cogswell, secretary State board of health, Helena.
Nebraska.—Dr. Ira H. Dillon, chief bureau of public health, Lincoln.
Nevada.—Dr. S. L. Lee, secretary State board of health, Carson City.
New Hampshire.—Dr. Charles Duncan, secretary State board of health, Concord.
New Jersey.—Dr. Jacob C. Price, director of health, Trenton.
New Mexico.—Dr. C. E. Waller, United States Public Health Service, temporary commissioner of health, Santa Fe.
New York.—Dr. Herman M. Biggs, commissioner of health, Albany.
North Carolina.—Dr. W. S. Rankin, secretary and treasurer State board of health, Raleigh.
North Dakota.—Dr. C. J. McGurren, secretary State board of health, Devils Lake.
Ohio.—Dr. Allen W. Freeman, commissioner of health, Columbus.
Oklahoma.—Dr. A. R. Lewis, commissioner of health, Oklahoma City.
Oregon.—Dr. David N. Roberg, State health officer, Portland.
Pennsylvania.—Dr. Edward Martin, commissioner of health, Harrisburg.
Philippine Islands.—Dr. Vicente de Jesus, acting director of health, Manila.
Porto Rico.—Dr. Alejandro Ruiz Soler, commissioner of health, San Juan.
Rhode Island.—Dr. B. U. Richards, secretary State board of health and State registrar, statehouse, Providence.
South Carolina.—Dr. James A. Hayne, State health officer, Columbia.
South Dakota.—Dr. Park B. Jenkins, superintendent, Waubay.
Tennessee.—Dr. Olin West, secretary State board of health, Nashville.
Texas.—Dr. C. W. Goddard, State health officer, Austin.
Utah.—Dr. T. B. Beatty, State health commissioner, Salt Lake City.
Vermont.—Dr. Charles F. Dalton, secretary State board of health, Burlington.
Virginia.—Dr. Ennion G. Williams, State health commissioner, Richmond.
Washington.—Dr. John B. Anderson, State commissioner of health, Seattle.
West Virginia.—Dr. Richard T. Davis, commissioner of health, Charleston.
Wisconsin.—Dr. C. A. Harper, State health officer, Madison.
Wyoming.—Dr. C. Y. Beard, secretary State board of health, Cheyenne.

○